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THERAPEUTICS AS A SCIENCE.

II.

THE TRIPLE BASIS OF THERAPEUTICS.

From what has gone before it will be evident that a knowledge of life in its normal condition, a knowledge of disease or of life in its abnormal condition, and a knowledge of measures calculated to remove disease or palliate its sufferings, are the three pillars on which therapeutics as an art must rest. It is true, as we have said, that diseases have been treated, probably from the date of its first occurrence, without any knowledge, certainly with no accurat knowledge, of life, of disease, and of remedial measures, and gen rally, we may say, with the most erroueous notions of them; not only treated but cured or palliated. Whether, in the infa of mankind, instinct was more acute than it is now, and whe man was then guided by instinct or pure chance in the sele of remedial measures for his ailments which must have bee few and simple, it is impossible to say. Certain it is that as in other matters the growth of knowledge has been slo

Whether man has received any direct inspiration Creator, is a matter which it would not be profitable in this place. This much is evident to all, and therefo putable, that in the ordinary course knowledge adva accumulation of experience. There is a limit to exp a variety of causes of which the number of per the capacity of the observer, and the opportunities for observation are the chief. Hence in the early ages when the multiplication of the race had just begun and was slowly going on, the accumulation of experience was necessarily slow and irregular. In the matter of disease and its management this must have been particularly so from all the causes combined; disease in those times must have been much less frequent than now, and consequently the number of sick persons and the number of observers were very limited, and it is easy to see how slender the chance was for finding out remedies, even admitting that signatures were the chief guide in finding them.

THERAPEUTICS IN THE EARLIEST STAGE PURELY EMPIRICAL.

Therapeutics, in its earliest stage, was thus purely empirical except when it was simply hygienic, such as abstinence from or restriction of food and drink when the disease, whatever it was, was traceable to excess, avoidance of the cold or the sun, &c., when it was evidently due to the one or the other, and so on. Drug therapeutics, even when guided by signatures, was a matter of haphazard and chance. The administration of drugs in cases of sickness was a step in advance of hygiene; and whatever might have been the reason which first led to it, it itself laid the foundation of a knowledge of drugs, and to their subsequent more accurate selection. For drugs could only have been administered in their crude state, and thus administered they must have pro-
luced some perturbation of the system in the shape of exaggerat-
d physiological activity or actual pathological symptoms or new
seased conditions other than those for which they were adminis-
ed. Increase of the sweat and the urine come under the
ner head, and vomiting and purging under the latter. These
have been first noticed as the most obvious effects of drugs.

WHEN DID THERAPEUTICS BEGIN TO BE A SCIENCE?

nowledge of these obvious effects of drugs could not but
a more careful examination of their action in order to dis-
y other effects they might produce in the system, and this
ion was bound to be rewarded with fresh discoveries. It
s way that in the past, before the experimental method-
urated, a knowledge of drugs as remedial agents was
Accidental poisonings also must have helped to add
ledge. Therapeutics began to rise to the dignity
vhen drugs began to be administered with knowledge

of their actual effects on the system, on whatever principle their administration might have been made.

THE PRINCIPLE OF CONTRARIES THE FIRST GUIDE OF THERAPEUTICS.

It is highly probable that, after the discovery of some of the most obvious properties of drugs, such as we have pointed out, their use must have been based on the principle of contraries, a principle which commends itself to the human mind as the most natural and rational, and one which has the most convincing analogy in the physical world. Resemblances and differences are what meet the eye at every step in the observation of nature. It is difference which distinguishes one object, one event, from another. There are degrees of difference, and it may amount to contrast or oppositeness Blackness and whiteness, darkness and light, heat and cold, moisture and dryness, must have been familiar examples even at the dawn of reason, and must have led the human mind to think of counteracting one thing by its opposite. Thus the principle of contraries was one of the earliest generalizations, and as a principle it embodies an absolute truth. This accounts for the unbounded sway it held over those who took upon themselves to treat disease, for so long as down to the end of the last century.

IT IS THE ONLY TRUE LAW OF THERAPEUTICS; THE CAUSE OF ITS FAILURE.

The principle of contraries embodies a truth or a law of na
which, properly understood, will be found to constitute the
true foundation of Therapeutics. It underlies all curative ac
What is this truth or law of nature? It is, that one force
counteracted only by an opposite force, that is, by a for
to it in intensity and opposite to it in direct
can be no other law of equilibrium. Whether und
or not, whenever a vital disturbance or diseas
that is, whenever the equilibrium of health an
restored, it is always by forces antagonistic the
forces. How is it then that the principle of contr
acted upon by physicians for thousands of years,
signal failure? such a failure as very nearly to s
medicine of the most observant and most consci
tioners? This was not due to any fault of t
due entirely to the faulty method of applying

This faulty application of the principle, in its turn, was due, in the first instance, to imperfect knowledge of disease and of the properties of remedial agents. The imperfect knowledge of disease consisted in mistaking one or two prominent symptoms for the whole disease; similarly, the imperfect knowledge of a drug consisted in taking one or two of its obvious effects as its only effects. The administration of a drug, therefore, having reference to one or two of its properties for the suppression of one or two symptoms supposed to constitute a disease, cannot be expected to be followed invariably by the disappearance or extinction or permanent cure of the disease. Take diarrhœa as an instance. The loose alvine evacuation is a single symptom which is looked upon as the disease. A drug is known to bind the bowels. Say this is opium. Opium is prescribed for every case of diarrhœa. A few cases are cured, but most are not, and some are rendered worse. This necessitates a search for other remedies which constipate. When they are found, always by chance, they are prescribed, probably singly at first, and then in combination with each other in various permutations, when failure is again the result of their use. Here we have the reason of polypharmacy, than which nothing has been more disastrous to the true progress of Therapeutics.

If the application of the principle had been made with actual knowledge, however imperfect, of diseases and of drugs, therapeutics would not have suffered so much as it has done. By a trange perversion the nature of diseases, instead of being des- bed as consisting of such and such symptoms, and the nature drugs as having such and such effects on disease or health, r natures were brought under the arbitrary, fanciful genera- on of being either hot, cold, moist, or dry, or a mixture of nd moist, hot and dry; cold and moist, cold and dry: and his was based the application of the principle. What but ould be the result of treatment of hypothetical diseases by ical remedies? If ever any cures had taken place, they e been brought about by the purest chance, by the administration of the proper remedy, or in spite of edies, by the regimen prescribed, by the recuperative ature.

(To be continued.)

HOMŒOPATHY IN THE FORTHCOMING INTERNATIONAL EXHIBITION IN PARIS IN 1900.

It appears from an article in *l'Art Médical* for December 1898 by Dr. P. Jousset, that the French Homœopathic Society having asked of the Commission, charged with the organization of the Medical Congress at the Exhibition to be held in 1900, authority to hold an international congress of their own, Dr. Gaucher at a meeting of the said Commission proposed not to give the authority asked for. The reason assigned by Dr. Gaucher was that as homœopathy was but a branch of therapeutics, homœopathic physicians had only to register themselves under the Therapeutic Section of the Medical Congress, and there would be no necessity for holding a separate congress of homœopathic physicians. Nothing, in our opinion, could have been more liberal than this proposition of Dr. Gaucher, and yet strange to say this has not been accepted by the French Homœopathic Society who may be said to represent Homœopathy in France.

We need hardly say that we share in the regret expressed by Dr. Jousset at this decision of our French confrères, who, probably saw in Dr. Gaucher's proposition a snare to entomb the new system in obscurity and prevent it from showing off its distinctive features and truly scientific character. Even if there was a snare, which we believe there was not, it could have bee easily avoided, and indeed the tables could have been turn against those who intended to lay the snare, by demanding, as l been suggested by Dr. Jousset, guarantee for liberty of discuss at the meetings of the Congress, liberty of discussion not onl French homœopathic physicians, but for the 150 to 200 fo homœopathic physicians who would be present at the Co at the invitation of their colleagues of France and who, th would require to be protected from the arbitrary will of tolerant majority.

We think, with Dr. Jousset, that this guarantee en secured and we regret with him that a fine oppor en lost for a most desirable meeting of the most d members of the old and the new schools on t ground of vieing with each other in the endeavou erapeutic truth. Such a meeting, as has been hap by Dr. Jousset, would have marked a considerable progress towards the reconciliation, if it could not bring about a complete fusion, of the two schools. The schools have long remained separated from each other. It is time that they should unite for the good of mankind. The new school, notwithstanding its existence for a century, and notwithstanding its rapid growth, especially in the United States, is yet as regards numbers a helpless minority, and it is doubtful if in another century it will attain to the numerical strength of the old school. What a gain would it be to Therapeutics if the members of the old could be brought over to recognize the truth in possession of the new school. If the ardor and enthusiasm, with which members of the old school are making experiments on the lower animals, were devoted to instituting provings on man, what rich and solid additions would be made to the Materia Medica. Let us devoutly wish, with Dr. Jousset, that there be no more schism or heresy but that all physicians work in harmony for the conquest of therapeutic truth.

None but the most bigoted amongst us do think that we have the monopoly of all therapeutic truth, that the homœopathic is the absolute and the only law of cure, that nothing else can be or need be learned. There is abundance of experience, of the most bitter experience, to show the error of this view, to show that though homœopathy is as yet the most advanced point in medicine, it is far from being its ultimate goal, which has to be found out. That the insufficiency of Homœopathy is tacitly acknowledged by a large number of our colleagues is shown by their hankering after unproved remedies. Dr. Hale, speaking of the usefulness of Arseniate of Strychnia, goes so far as to say: "I cannot imagine a bigotry so narrow as to deprive one of [illegible]ng a drug because it has not been proven, especially when we [illegible] well acquainted with the pathogenetic action of its constitu[illegible] as in this case. Some of our remedies, which have made [illegible]est cures and have served most to make Homœopathy [illegible]ar, have not been proven." It is further shown by the [illegible]use of the so-called biochemic remedies of Schuessler, of [illegible]toxins and animal extracts of the old school.

[illegible] sufficiency of homœopathy is not entirely due to want [illegible] provings of all drugs needful for the healing of diseases. This is a desideratum which will never be attained, and homœopathy must remain insufficient from this cause alone. But there is, we believe, inherent insufficiency in it for many diseased conditions for which it is not and cannot be adapted, and for which other than homœopathic remedies must be sought and administered. We have to instance the administration of Camphor in the first stage of cholera recommended by Hahnemann, according to his own admission, not on the homœopathic but on quite a different principle. So that in extending our researches beyond the homœopathic formula we are but following in the footsteps of Hahnemann who, as Dr. Jousset has reminded us, placed experience and the experimental method above all our cherished ideas and dogmas. Has he not said, that "for the totality of the symptoms of the disease to be cured a medicine must be sought which has a tendency to produce similar *or* opposite symptoms, *according as experience shall prove whether the morbid symptoms are most readily, certainly, and permanently removed and changed into health by similar* OR *opposite symptoms*" (Organon, § 22) ?

Thus Hahnemann, as a man imbued with the true spirit of science, leaves the door open to allow experience to boldly enter the temple of therapeutics and decide what is to be and what is not to be the law or the laws of cure according to the nature of disease. It is true that in the very next section he tells us that "all pure experience, however, and all accurate research convince us that persistent symptoms of disease are far from being removed and annihilated by *opposite* symptoms of medicines, tha
on the contrary, after transient, apparent alleviation,
forth again, only with increased intensity, and become manifes
aggravated." It is true also that in Section 25 he further
"Now, however, in all careful trials, pure experience,
and infallible oracle of the healing art, teaches us that act
that medicine which, in its action on the healthy bod
demonstrated its power of producing the greatest nun
symptoms *similar* to those observable in the case of diseas
treatment, does also, in doses of suitable potency and att
rapidly, radically, and permanently remove the total
symptoms of this morbid state, that is to say, the wh
present, and change it into health."

Be it noted that Hahnemann declared "pure experience, the sole and infallible oracle of the healing art." He has given out what that experience taught him as regards the employment of drugs for their opposite or similar symptoms. Now that experience was, it cannot be denied, a limited one. It was only the sum total of his and his disciples' experience. And that experience, and further experience so far as it has gone, has shown that, in the large majority of instances, drugs capable of producing similar symptoms bring about the speediest and the most permanent cures. But there is a residue where symptoms are not available, and even when available they are of no avail. What are we to do in these cases?

All that we can do and ought to do is, besides endeavouring to purify and extend our materia medica, to avail ourselves of the accumulated experience of the whole profession. We must not in supercilious arrogance look upon our cures as the only genuine ones, and those effected by others as spurious. There are spurious cures as certainly as there are genuine cures under all systems of treatment, and we ought to be able to sift the genuine from the spurious, and when we do that we shall find that cures may be brought by a variety of ways and methods. These methods and ways can be co-ordinated and brought under a single law if that is possible, only when we have arrived at a true conception of life. It cannot be denied that towards this goal, the unravelling of the mystery of life, the old school is working hard and so far advancing the cause of Therapeutics. This again shows the necessity of the two schools joining hands nd [illegible]ing by each other's labors. The lines of research ursued by different workers will then, instead of diverging as y are now doing in unprofitable directions, will converge to a us for the illumination of therapeutics, which is the sole *raison e* of the profession.

hope and trust that the decision of the French Homœo- Society, as regards the proposition of Dr. Gaucher, has en final, but that on maturer consideration they will find ay to accepting the offer which has, we think, been made liberal spirit.

THE PLAGUE IN VIENNA AND ITS LESSONS.

The occurrence of cases of plague among the assistants of a bacteriological laboratory in Vienna, was a sad and unfortunate accident. The facts in connection with it were as follows :

The members of the Commission, who were sent by the Austrian Government to Bombay in January 1897 to investigate and report on the plague, concluded their labors there by the end of April when the epidemic declined and they had no cases to work with. Since their return to Austria up to the time of the occurrence of the disease on one of their attendants they were continuing their research with the cultures of the bacilli they had taken with them from Bombay. The Pathological Laboratory attached to the General Hospital (Allgemeines Krankenhaus) of Vienna was the scene of their labors. The object of their research was, (1) to discover the exact relationship between the disease and the bacillus pestis, and (2) to find out some prophylactic and antitoxic method of treatment which may lead to the prevention and cure of the disease. "It appears," says the *Lancet* of the 29th Oct. last, "that up to the last week or two some fairly successful results have been obtained as regards the second part of the investigation, and this had even gone so far that it had been suggested that the laboratory attendant who was engaged in looking after the inoculated animals should submit himself to preventive inoculation. To this, however, he demurred, and the step was not taken."

The attendant here referred to, Franz Barisch, while objecting to take the inoculation, allowed himself to be negligent in taking due precautions against being infected by the poison wa being manufactured in the laboratory under his ey virulent effects of which he was witnessing in the anir jected to experimentation. We have the statement of Profe Paltauf that, though an exceptionally intelligent and good at dant, he was often under the influence of liquor, in which he was careless as to where he laid down his pipe and even the condition of his hands which were continually handlin littering the infected animals and cleaning out their cages, we have the testimony of his wife that his disease " likely due to his having caught a severe cold, as he h on two occasions stayed out until an early hour in the returning home with the signs of having had too much to drink."

The following account of Barisch's fatal illness is given in the *British Medical Journal* of the 5th Nov. last, abstracted from the detailed and authoritative account in the *Wiener Klinische Wochenschrift*, and will be read with considerable interest from many points of view:

> On the morning of Saturday, October 15th, Dr. Ghon, the chief assistant in Professor Weichselbaum's institute, was informed that Barisch had suddenly been taken ill in the night and had gone home from his work. Dr. Ghon and Dr. Stejskal, of Professor Neusser's clinic, visited the patient, and the latter examined him. The symptoms were slight; definite evidence of pneumonia was not forthcoming, but a provisional diagnosis of pneumonia was made. Some fresh sputum was taken to the institute and examined for the influenza bacillus. On careful examination this was not detected, but Dr. Ghon found some pneumococci and also some plump, faintly-staining bacilli, showing transitional forms into large round bodies. It was the appearance of these organisms which raised in his mind the first suspicion of plague. He at once showed the preparations to his colleague, Dr. Albrecht, and both agreed that a certain conclusion could not be arrived at except by making cultivations and experimental inoculations. In the meantime, the other assistant, Dr. Mueller who had studied the disease clinically in Bombay, was appraised of the circumstances and sent to see Barisch. He reported that the most careful clinical investigation failed to reveal any evidence of plague. Nevertheless the wife of the patient was carefully instructed in the precautions to be taken, just as if the case had been diagnosed with certainty, and sublimate pastiles were given her wherewith to disinfect the sputum and other excreta. The same evening Dr. Ghon made cultivations of the sputum on agar and gelatine, and injected a small quantity into a rat, one of the animals most susceptible to plague. Early next morning the rat was quite well, there was no growth on the gelatine, and the agar showed only a few colonies of cocci and none of plague bacilli. Still as no growth of Friedlaender bacillus—the only one with which the suspicious forms could be confounded—was seen, the fear of plague again arose. At 8 A.M. Dr. Ghon visited Barisch; Dr. Mueller once more expressed his opinion that the case was not one of plague, but it was nevertheless transferred in the course of the day to the isolated room of Professor Nothnagel's clinic. The bedclothes were most thoroughly disinfected. On this morning (Sunday, October 16th) ome [illegible] sputum was obtained, and cover-glass preparations and cultures de from it. Numerous bacilli were seen which resembled that of [illegible] but which at the same time were not absolutely distinguishable from dlaender's bacillus. A second rat was injected intraperitoneally with sputum. Next (Monday) morning neither set of cultures showed cal colonies of plague bacilli. The first rat remained well, but the d died in the course of the morning; the necropsy showed septic ing, but not the appearances typical of plague infection. There was orrhagic exudation in the peritoneal cavity, which contained a few ike those of plague; but no bacilli were obtained from the spleen. solute diagnosis was not made till typical colonies appeared in agar a from the heart's blood of this rat. This did not occur till early norning of Wednesday, October 19th, Barisch having died a n the Tuesday afternoon. On Wednesday, also, some agar plates with sputum on Monday evening showed typical plague colonies; Wednesday evening—that is four days after infection—the first

rat inoculated died of plague. The body of Barisch was at once enveloped in cloths soaked in sublimate solution, and all the funeral arrangements were conducted in such a way as to preclude any possibility of the spread of the disease.

On the 19th Oct., the day following the death of Barisch, Albertine Pecha, one of the two nurses who attended on him, showed signs of illness which proved to be plague, at least, was so diagnosed after the rapid death of Barisch. She was treated with Lustig's serum, and lived till the 30th. On the 21st, that is, three days after Barisch's death, Dr. Hermann Müller, who had attended on him, fell ill and died on the next day. Besides giving constant attendance on Barisch, Dr. Muller had "worked night and day until not a trace of infective material was left in the laboratories and animal houses." "The second act in the tragedy appears to have been due," the *Lancet* has well observed, "to hypersensibility rather to any blunting of a feeling of responsibility, and we have in the case of Dr. Müller and of the two nurses who attended on Barisch an instance of devotion to duty overcoming all sense of danger and of the necessity for taking personal precautions. The extreme anxiety on the part of all the actors in this terrible drama to prevent the further spread of the disease amongst those outside led to their own undoing."

The first lesson to be drawn from this unfortunate accident is that bacteriological laboratories are a source of danger to those who work in them, and through them to the community. If the spread of the disease had not been promptly checked what must have been the fate of Vienna? And if Vienna had fallen a victim who knows what might have been the fate of Austria and of the whole of Western Europe? Hence in every country, the Government cannot be too strict in enforcing the utmost precaution f the purpose of seeing that the organisms which are the subjects investigation in bacteriological laboratories do not escape bey sphere allotted to them. None but tried experts should arge of these laboratories, and the conduct of the assist hould be watched with the utmost vigilance. We car ppreciate too highly the foresight and wisdom which prom ur good Lieutenant-Governor, Sir John Woodburn, to pr he bacteriological investigations that were being carried Health Officer, Dr. Nield Cook, with cultures of Plagu at the Alipur Zoological Gardens at the time when cases of plague were occurring in Calcutta.

The second lesson is the too melancholy though positive proof it afforded of the causal relationship it established between the bacillus of plague and plague. The bacilli in this instance were the very remote descendants of the bacilli of plague patients in India, and yet they gave rise to most virulent forms of the disease.

The third lesson is that even those who are familiar with the plague, as was Dr. Müller, might mistake its first stage for that of ordinary influenza or pneumonia, and that nothing short of bacteriological examination can settle the diagnosis in the first cases of an epidemic or in sporadic cases. Dr. Müller, who had for four months studied the disease clinically in Bombay, reported after seeing Barisch on the first day, that "the most careful clinical investigation failed to reveal any evidence of plague." He expressed the same opinion on the second day.

The fourth lesson is that the organism, when any how debilitated or disordered, becomes more liable to be infected, and that the power of resistance is in direct proportion to the amount of vital power it possesses. It is doubtful in the case of Barisch if he would have caught the disease had he not lowered his vitality by constant drink; and it is almost certain in the case of the nurse and Dr. Müller that if they had "taken more food, more rest, and more sleep they might all have been alive to-day, as even the pneumonic form of plague does not, as a rule, infect people in a good state of health."

The fifth lesson is, that as every sick chamber of infectious disease is a bacteriological laboratory we can not be too careful n protecting the attendants from the virulent germs which are ing continually generated and thrown off from the patient; d that with the simplest precautions the spread of even the t destructive infectious disease may be prevented, as was done is particular instance.

THE INDIAN PLAGUE COMMISSION AND THE EDITOR OF THIS JOURNAL.

Before the arrival in Calcutta of the Indian Plague Commission the following advertisement appeared in the Papers:

'THE INDIAN PLAGUE COMMISSION will shortly visit Bengal with the object of inquiring into—

(1) the origin of the different outbreaks of plague;
(2) the manner in which the disease is communicated;
(3) the effects of curative serum; and
(4) the effects of preventive inoculation.

The Commissioners will be glad to examine persons who are in a position to assist them in arriving at a conclusion regarding the questions under investigation, and any such person who desires to bring any facts before the Commission is requested to submit without delay to the Secretary of the Commission a statement in English, showing what opportunities he has had of observing matters connected with Plague, and the facts to which he can testify. The Commissioners will then determine whether they will call and examine such person.

SIMLA. C. J. HALLIFAX,
Secretary, Indian Plague Commission.

Not having observed Plague either in Calcutta or elsewhere we could not deem ourselves to be in a position to assist the Commission in any way regarding the questions under their investigation. We, therefore, did not submit any statement as required, as we could not make one based upon facts. Nevertheless on the 30th December last we received the following letter from the Secretary:

SIR,—The Indian Plague Commissioners would be glad to take you evidence if you desire to make any statement of facts observed by yo with regard to the outbreak of plague which has taken place in Calcutt If you wish to appear before the Commission, will you please be good enou to send me without delay a statement in narrative form of the main po to which you can depose, in order that the Commissioners may hav opportunity of studying it before your examination. In case you evidence, your evidence will be taken at the Home Office of the Gover of India on Wednesday, January 4th, and it is trusted that you w it convenient to be present there at 10 A. M. on that day.

To this letter we returned the following reply:

SIR,—I have the honor to acknowledge the receipt of your lette dated the 30th instant, and in reply beg to state that as I d across any case in the course of my practice, which I could call pl no actual experience of the disease. I, therefore, do not competent to give evidence before the Commission which I could base upon positive, observed facts.

In answer to the above the Secretary addressed us the following letter under date, the 2nd current:

Sir,—The Indian Plague Commissioners have received your reply to my letter inquiring whether you were willing to give evidence before them or not. They would like to have your views regarding the prevalence of fever with bubonic swellings in Calcutta and the possibility that cases of such fever may have been mistaken for plague, and would like you generally to put before them your views on the existence or non-existence of plague in Calcutta. They are prepared to carefully consider all you have to say, and will meet at 10-30 on the 4th, and should you reconsider your determination to give evidence will you please be present at the Home Office then.

After this very courteous letter, which showed the anxiety of the Commission to obtain all available information bearing upon the subject of their inquiry, we deemed it our duty to appear before them, and sent the following statement before doing so:

Sir,—In reply to your letter of yesterday's date received by me last evening I have to state that I shall be glad to be present at the meeting of the Indian Plague Commissioners to-morrow the 4th instant. I am sorry, however, it will not be possible for me to attend at 10-30, as I cannot finish my morning work before 11-30. I hope it will be no inconvenience to the Commissioners if I appear before them at 12 noon.

With reference to my first letter which you have interpreted as implying a "determination not to give evidence" I beg leave to say that I really and honestly thought I was not competent to give evidence, because, as I said, I could not base any statement I might make upon observed facts. t was no reluctance to give evidence or any "determination not to give vidence," but it was simply an anxiety not to take up any time of the mmission by any statement which would be opinion after all, that comed me to say what I did say in my first letter

might appear strange that when so many cases of plague are reported ve occurred in Calcutta from the middle of April to the end of Sepr I should not have seen a single case which I could call plague. his it is not to be inferred, and I do not wish it to be inferred, that re actually no cases of plague in the city. The strangeness will r when I state a few circumstances which may be said to have t about.

rst place, my health has suffered so much since November 1896 carcely go about much, especially was this the case during the when the cases occurred, when I could not work for an hour

In the second place, though a member of the Bengal Plague Commission I had no opportunity of observing any of the cases of plague that occurred in the city. The Commission used to hold meetings before this outbreak of the disease, but strangely enough there was no meeting, so far as I am aware, from the date Calcutta was declared plague-infected to the present day. If any meeting had been held I should have been glad to have availed myself of any facility that might have been given to the members of the Commission for observation of the cases that were being reported as occurring. I took the inaction of the Commission to mean that members like myself were not to meddle in the matter.

In the third place, to prevent misunderstanding I ought to state my own position in the profession: Ever since I have been driven by conscience, by repeated observation, to look upon homœopathy as the most advanced point in the domain of medicine, I have become an outcaste in the profession. My professional opinion in any matter is not sought, and to prevent the unpleasantness of a rebuff I do not obtrude my opinion either upon Government or upon my professional brethren, except that as a matter of public duty I have to put forth my views in the pages of my Journal.

As the Indian Plague Commissioners have been good enough to express their wish to have my views on the prevalence of fever with bubonic swellings in Calcutta and the possibility that such fever may have been mistaken for plague, and also my views on the existence or non-existence of Plague in Calcutta, I will briefly state:

1. I have observed and treated cases of fever with swellings of salivary glands and of the tonsils. These cases are of frequent occurrence. Next in frequency are fevers with swellings of the cervical glands, and the rarest of all are fevers with swellings of the inguinal glands (non-syphilitic). But however rare such cases are, they do occur. Under judicious treatment the mortality in all these cases is not much. Whenever, however, the fevers are truly malarial and of the pernicious type, as we often meet with in Bengal, especially in the beginning of an epidemic, the mortality is very great.

2. Cases have come under my observation which were mistaken f plague but which recovered under the simplest treatment, or by flight fr Calcutta for fear of being taken to the isolation hospital. It is not unlik that many such cases were, during the plague-panic, taken to the isola hospitals, and treated with stimulants from the beginning, were ren worse. Natives of this country, unaccustomed to stimulants, d bear them well during fever. Sometimes the febrile condition fully aggravated by them.

3. I am not in a position to say, whether there was or was not p Calcutta during the time it was officially declared to be plague My impression is that many of the cases taken as plague were not so.

As might have been anticipated our evidence before th sion did not amount to much. I had to restate what I my letter that I was a practitioner of medicine who believed in homœopathy, that I had not myself seen any cases of plague in Calcutta; that I had seen cases of fever with swellings of the cervical and parotid glands which were mistaken for plague by some well-known practitioners, but which recovered under the simplest treatment or even under no treatment at all. Not having kept any record I could not give details of these cases, all that I could give was my general impression about them. If there were any cases of plague in Calcutta they must have been very few indeed. I stated further, that I did not seek the position in the Bengal Plague Commission which I was occupying as a member, but that it was thrust upon me by Government, and that if any duties had been given to me as a member I would have gladly performed them. Indeed, it was in view of being of some service to Government and the country that I agreed to accept the membership of the Commission.

It gives me great pleasure to tell the readers of this Journal that though I declared my belief in homœopathy I met with the greatest courtesy from the Commission, all the medical members of which are of the old school. On the evening of the day I gave my evidence before them I had the honor of meeting the President of the Commission at an evening party given by some of his pupils practising in Calcutta, and I am glad to say that I have rarely met with such a perfect gentleman and a true man of science free from prejudice as Prof. Fraser. We were assured by him that the Commission will do more than take evidence, that it is their intention, and that they have already commenced, to work out the scientific problems in connection with plague exact- on the lines pointed out in this Journal for November last. e await with intense interest the results of these investiga- s which, conducted under such veterans in special biological rch, as Professors Fraser and Wright, are sure to throw on those problems still shrouded in so much obscurity.

THE INDIAN MEDICAL RECORD.

congratulate the learned and energetic editor on the n of his fortnightly into a weekly Journal. From the already published we are confident it will maintain the which the Journal has deservedly earned.

EDITOR'S NOTES.

The Lawyers' Way and the Doctors' Way.

When a boss politician seeks to coerce judicial action and punish judicial independence, the professional body of his fellows, in recognition of the insult to the guild and to the public, quickly get together and put in effect a clear-cut machinery to punish the impertinence and prevent the public mischief. When a medical school acts as a diploma-mill; when bogus diplomas are offered for sale in numerous public advertisements; when nepotism and yellow journalism try to scapegoat their sins on medical men; when newspaper doctors exploit their own fame in the daily papers, when the laws of our country are dictated or disobeyed by multi-millionaire nostrum syndicates—what does the medical profession do? Nothing! - *Phil. Med. Journ.* quoted in *American Medico-Surgical Bulletin,* Nov. 25, 1898.

Luxation of Eye from Blowing the Nose.

Schanz (*Beitrage zur Augenheilkunde,* Heft xxxiv, 1819) reports the case of a glass blower who, while blowing a glass, had the gas jet blown into his face by a puff of wind, this caused him to sneeze and violently blow his nose; the eye became displaced forwards out of its socket, but was replaced, with some force, by a fellow workman. The patient then went to consult Schanz, who expressed some scepticism as to his story; thereupon he immediately blew his nose, and the eye proptosed. Schanz pressed it back into place, the lids being tense with air and crackling when touched. The air could be partly expressed. In the course of a week the emphysema had entirely subsided, and some inflammation of the disc had also disappeared, and vision was normal. The patient had always been accustomed to inflate his cheeks, and thence expel the air in the process of blowing glass, and not directly from the lungs. This had led to an increase in the patency of Steno's duct, so that the parotid gland became inflated at the same time as the cheeks. Examination of the nose failed to reveal where its walls were perforated.—*Brit. Med. Journ.,* Dec. 10, 1898.

Missed Abortion: Twins.

De Bruijn (*Nederl. Tijdschrift var Geneeskunde,* No. 16, 1898) writes of a healthy woman, aged 40, the mother of eight robu children, in whom the period ceased at the beginning of October. S consulted her doctor the following March because, though she evidently pregnant, no fœtal movements had been felt. The abdon too, was in her opinion getting smaller rather than larger. The ut was of the size normal at the fifth month, the ostium was close fœtal movements could be detected on palpation, nor could the heart be heard. No operative measures were adopted. In an ovum was discharged entire. It measured [illegible] by 8½ in. interesting is the fact that there were [illegible] amniotic cavit containing a fœtus. One was of about [illegible] sixth the othe ghth week. The placenta seemed to [illegible] reached the fourt histologically, its structure was norm[illegible] The mother was n health, both all through this pregnancy and in childbed. A year and a half later she was delivered at term of a healthy child. De Bruijn has observed another missed abortion. A multipara, aged 47, ceased to menstruate after May, 1897. In October the fœtal movements ceased. In March, 1898, a fœtus, 7 and 4-5ths of an inch in length, was delivered spontaneously. It was much shrivelled. The placenta had undergone fibrinous degeneration, and was extensively calcified—*Brit. Med. Journ.*, Dec. 10, 1898.

Investigations at Rome into the Etiology of Malaria.

The Italian observers, Grassi, Bastianelli, and Bignami, who are associated in carrying out a series of investigations at the Hospital of Santo Spirito, Rome, with the object of throwing light upon the etiology of malarial fever, have again met with success in their inoculation experiments with mosquitoes. (The continuation of Dr. Bignami's original paper dealing with this line of research will be found at p. 1541 of our present issue) On this occasion only one species of these insects was employed in the experiment—namely, Anopheles claviger, captured, as before, in the adult stage in the malarious region about Maccarese. The subject of the experiment was a young man who had never suffered from malarial fever and who was received into the Hospital of Santo Spirito for hysteria about four years ago, during which time he has been constantly under observation and has had no kind of fever whatever. This man for nineteen days slept in a room in which were set at liberty from time to time numerous specimens of Anopheles claviger. On Dec. 2nd (the eighteenth day) he began to feel unwell and on the 3rd the blood on examination was found to contain the parasites of malarial fever exclusively of the common tertian type (the spring tertian of Italian writers), This form of fever is prevalent at Maccarese. Considerable difficulty is experienced in continuing these experiments on account of many of the mosquitoes dying and others refusing to feed. This is probably due to the lateness of the season.—*Lancet*, Dec. 10, 1898.

The Psychological Weight Curve in Phthisis.

Wolff-Immermann (*Munch. med. Woch.*, June 21st, 1898) draws ention to the importance of recognising slight alterations of the y weight in cases of phthisis. He gives the results of some of his rvations in the hospital at Reiboldsgrün. At first the patient's es are weighed independently, and the exact weight is marked board beside his bed. On all future occasions the patient must he same clothes, so that the amount may be subtracted from eral body weight. It is also important to weigh the patients at the same time of the day, and to note how much food is nsumed. Cases occur in which a definite increase or diminu- eight takes place, and where the patient's appetite and ondition remain the same. Immermann has found that these ns in weight are, in the majority of cases, to be attributed to psychical causes. Anything producing annoyance or excitement is sufficient to cause a definite lowering of the body weight for a day or two, without interfering with the satisfactory progress of the case. Curve charts are given which demonstrate these points The increase of weight which accompanies a change of treatment is also very noticeable. At the commencement of the milk cure there is a steady rise in weight, which however does not continue after the first two or three weeks. A similar rise in weight is seen to commence with the administration of iron. The author suggests that the element of hope accorded to the patient by an alteration of treatment is sufficient to explain the rather rapid rise of body weight which takes place at the commencement of the new treatment Immermann considers that the weight curve in phthisis shows the progress of convalescence most surely, and in this respect resembles the temperature curve in acute infectious diseases —*Brit. Med Journ*, Dec 24, 1898.

Deep Œsophageal Diverticula

Reitzenstein, of Boas's clinic (*Münch Med. Woch*, March 22nd, 1898), says that œsophageal dilatations are divided into diffuse and circumscribed—the former are mostly due to an anatomical narrowing. The primary or so called idiopathic dilatations are distinguished with great difficulty from the secondary The circumscribed dilatations are either due to traction or to pressure from within The former are situated opposite the bifurcation of the trachea and give rise to no symptoms, whereas the latter are placed at the junction of the pharynx and œsophagus, where the tube is at its narrowest Besides these typical pressure diverticula, large sacculated diverticula in the lower part of the œsophagus occur, but only 5 such cases have been recorded in the last five years. The author then gives details of such a case in a woman, aged 50, which was very thoroughly examined by the following methods: (1) A stomach tube was passed into the diverticulum and into the stomach, and the fluids from both chemically and microscopically examined, (2) two tubes were passed at the same time, one into the diverticulum, and the other into the stomach; (3) Einhorn's electrical apparatus was used, and finally a photograph by the Roentgen rays was obtained after the dilatation had been filled with a solution containing bismuth The conclusions were drawn that there were two cavities, the one consisting of the stomach, and the other of a diverticulum in the œsophagus An organic narrowing could be excluded, and thus there remained a primary dilatation o the œsophagus or a deep seated, large diverticulum, or the two co ditions combined. The author concludes that there was a diverti lum which would hold 100 to 300 c cm, and also a diffuse dilata of the œsophagus. The shadow obtained in the Roentgen photog measured 10 cm. broad and 10 cm high, and bulged to the The treatment consisted in washing out the œsophagus daily horizontal position Food was taken by the patient while lying on her back. Considerable improvement occurred, gained 12 lbs. in weight in five weeks.—*Brit. Med. Jour.* D

The Will of Dr. Schuessler.

Dr. Med. Schuessler has made the city of Oldenberg his legatee. We read concerning the transactions of the Municipal Council as reported in the *Oldenburg Zeitung* of the 12th of April the following:

"From the property of the deceased 93,700 marks are to be paid out in legacies, the city itself is to receive 3,000 marks. The remainder shall remain as the capital of a fund under the care of the magistracy for the support of deserving and indigent persons without distinction of faith. The property consists of 145,000 marks besides a house on Peter street, with its furniture. The magistracy moved the acceptance of the heritage and the sale of the house and furniture.

"As to this fund the president communicated the further conditions as found in the will, namely, that the persons thus aided should have lived at least for three years in Oldenburg, and the deceased had fixed on 300 to 400 marks as the amount to be paid to each individual.

"Oberburgermaster, Dr Roggeman, remarked that the city thankfully receive this fund. The house on Peter street and everything belonging thereto would be sold at public sale as soon as practicable. He did not advise that those to be supported from this fund should be moved to this house. The value of the house as appraised in the insurance office was 18,000 marks.

"The president, Judge Rund, then pronounced a warm eulogy on the deceased: 'It is a duty of gratefulness to here make mention of the founder, whose will showed great generosity and a noble philanthropy. Many needy ones will be aided by this fund, and he hoped that those aided would ever gratefully remember the departed. He had shown great confidence in the magistracy of the city in giving it a free hand in the disposal of this fund. Honor to his memory!'

"All present assented to this eulogy by a standing vote. It was resolved that the city councils should at once accept the legacy and their determination to dispose of house and furniture at a public sale was approved of."—*Hom. Recorder*, Dec. 15, 1898.

The Untoward Effects of Dru

George F. Butler (*Medicine*, October) says practit are too apt
to refer any untoward effects produced by drugs to ects or impuri-
ties. Predictions may be made with considera y[illegible]o such
effects in regard to any particular drug from a know e of i[illegible]tion,
of the organs chiefly affected by the ordinary action drug and
the methods of drug excretion. An antipyretic wil ve, as unto-
ward effects, skin eruptions because it is excreted th h t
cause the skin through its pores regulates temperature, a
under the control of the central nervous system, regulat
ture; and finally because the skin is in close connection
y period with the nervous system. For the same reason
itating perspiration often results. Since control of the t
cannot be effec without control of the vasomotor system
ting the blood supply, heart failure, collapse, and palpitation
esult, together with certain eye and ear symptoms. If the drug
which tends to cause slight brain vasomotor disturbance, such

as results from what is known as a tonic action, then delirium, blindness, and deafness of a temporary character are produced. Temperature in the human subject is regulated by the three systems of nerves: thermotaxic or heat regulating, thermo-excitory or heat increasing, and thermo-inhibitory or heat-decreasing. As a more or less exact balance is kept by these centres, undue action of any of them constitutes a morbid state. If the thermo-inhibitory centres are too much stimulated they may lose their control; hence in certain individuals temperature rises from an antipyretic The action on the heart may, by its influence on the kidney circulation, cause kidney and bladder symptoms, even to the extent of albumen in the urine. If the antipyretic is excreted through the kidneys, albuminuria is especially likely to present itself as an untoward result. Alteratives and purgatives produce hæmorrhages from the mucous membranes, and œdema of those of the organs of special sense, besides skin eruptions. Hypnotics, through their action on the central nervous system, produce excessive perspiration, skin eruptions, vertigo, and heart collapse. Astringents cause diarrhœa and bloody intestinal discharges. Diaphoretics cause pains at certain points from overstimulation. In classifying tonics and alteratives together, the influence of the trophic nervous system, evident in the constitutional changes produced by diseases like typhoid fever, must be taken into account. Alterative drugs have much the same constitutional effect, according to the theory of their action now coming into general acceptance.—*Brit. Med. Journ.*, Dec. 31, 1898.

Clinical Aspect of the (1897) Plague in Bombay.

A. M. Lewin (*Vratch*, No. 21, p. 613) describes the following characteristic symptoms: (1) Facies pestica- the sudden exhaustion and weakness at the commencement of the illness are apparent in the facial expression, which is that of a sleeper with the eyelids lowered and the wrinkles smoothed out, and exhibits deep apathy and an absolute indifference to the surroundings. No other fever at its commencement—even on the very first day—is characterised by such extreme debility. (2) The tongue is swollen, showing the impression of the teeth on its edge; it is moist and is not tremulous. It is completely covered with a thick, moist, white fur (*langue nacrée* of Bulard), not met with in any other disease, generally present on the first day, and lasting for two or three days. (3) Lewin was not able to observe the alteration in speech mentioned by others, as he was not acquainted with native dialect. (4) Psychical troubles are charac-teristic signs of the plague; the systematic and obstinate "fix ideas" are for the most part of a depressive character. At the hei of the malady the sense of weakness disappears, and the patients in bed or get up. (5) Sclerotic injection: There is generally a pericorneal injection, without actual effusion of blood, and ther an acute conjunctivitis, or much more rarely keratitis, iri panophthalmia. (6) Buboes: In this epidemic carbuncle and p[illegible]ch were infrequent. The buboes appeared very early, and were [illegible]till we[illegible] developed at the beginning of the second day. A tionately large inflammatory swelling surrounded those affecting the inguinal, and was even more marked round the preauricular, glands—parotitis pestica—on account of the œdema of the glottis liable to supervene, was one of the most dangerous symptoms of the plague. (7) The inflammation of the lungs closely resembled commencing influenza, and was without well marked local signs; plague bacilli in the sputum were characteristic. (8) Plague gangrene occurred, generally during early reconvalescence or later; the ulcers seldom affected the favourite seats of bedsores, and had perpendicular margins not undermined. (9) Buboes which opened spontaneously were followed by deeply retracted cicatrices and persistently discharging fistulæ. Lewin strongly recommends the early incision of buboes, as the undermining of the skin by the pus may attain enormous proportions. (10) Pestis ambulatoria: Some cases are extremely slight, marked only by a little rise in temperature and a little pain in the inguinal region and armpit, but these cases are very dangerous in spreading the disease. (11) During convalescence psychoses of a depressive character, amounting sometimes to absolute stupor, may last from ten to fifteen days Lewin explains them as due to inanition, the result of a specific poison produced by the plague bacillus.—*Brit. Med. Jour.*, Dec. 10, 1898.

Infantile Scurvy and Artificial Foods.

A discussion on Infantile Scurvy took place at a recent meeting of the Société Médicale des Hôpitaux, Paris, and is recorded in the *Journal de Clinique et de Thérapeutique Infantiles* of Nov. 17th and 24. According to M. Netter, who showed a typical case of this disease, its causation has to do not merely with the use of artificial infant foods which has of late years become so general but even with certain modern methods of sterilising ordinary cow's milk. In his own case the child had been brought up on milk which was "maternised," that is, sterilised by heat and deprived of a part of its caseine. He suggests that milk is impoverished by this process and consequently loses its anti-scorbutic properties. M. Comby also showed an example of the disease in a child three months old, and here also the diet had been "maternised" milk. In the absence of any other probable cause in the form of dietetic errors and in view of a very marked improvement followed by a rapid recovery when fresh milk was adopted as the staple food the appearance of scurvy was not unnaturally attributed by both of these observers to the changes produced in the milk by "maternisation." They likewise drew tention to the fact that infantile scurvy though rare in France is ch more frequently met with in Great Britain and in the United es in America. The cause assigned for this international disparity doubtless the true one—namely, that in default of the maternal t French custom prefers a wet-nurse, while in this country and terica recourse is commonly had to some one of a multitude of "foods." M. Variot who also spoke on this subject, while ting the connexion between infantile scurvy and an artificial ated that he had not found that this connexion existed where the child's nourishment consisted simply of sterilised cow's milk. At the Bellville Dispensary 500 infants were thus fed while under his care and no case of scurvy occurred among them. On the other hand, he had found milk thus prepared to be invaluable as a nutrient in infantile atrophy. Notwithstanding some difference of opinion which is evidently the effect of mutual misunderstanding and more apparent than real, we may therefore consider the views of these various observers as agreed on the essential point in this discussion. For each the occurrence of scurvy in the infant has only one explanation—a faulty, because too artificial, diet. There is indeed no other possible theory of its causation and this is a fact which the practitioner must always bear in mind. At the present time the market is inundated with every conceivable form of milk and milk food, peptonised and non-peptonised, and with meat extracts in addition, all professedly most suitable for the nutrition of infants. There is unquestionably a serious danger that among so many elaborated feeding contrivances a child may miss that simpler chemical product of nature's laboratory for the digestion of which the alimentary canal was particularly intended. It is also noteworthy that in cases where the choice of milk is left to the direction of a medical adviser, where sterilisation is practised in its simplest form, and peptonisation if needed, as it sometimes may be, is carried out under medical direction, scurvy-rickets, atrophy, and most of the other digestive troubles of infancy are conspicuously absent. It should always be remembered that over refinement in the diet of infants is an error which usually defeats its intended purpose and results in their starvation — *Lancet*, Dec. 17, 1898.

On Menstruation and Ovulation in Monkeys and in the Human Female

Menstruation in monkeys was described by Rengger as occurring at irregular periods in cebus, by Saint Hilaire and Cuvier as a regular monthly discharge in cercopithecus, cynocephalus, and macacus, and by Sutton as fairly regular in macacus The late Mr. Bartlett, superintendent of the Zoological Gardens in London, and Mr Sanyal, superintendent of the Zoological Gardens in Calcutta, both assure me that monkeys menstruate regularly in their establishments, and I myself have observed regular menstruation in semnopithecus entellus, macacus cynomolgus, and cynocephalus porcarius, during the short time specimens of these animals were under my notice in Calcutta Semnopithecus entellus, living in the jungles on the south bank of the Hooghly, has a definite breeding season, and it is to be noted th
the specimens under my notice for three months menstruated regul
ly, although it was not their breeding season. Dr. Aitchison assu
me that M. rhesus, living in the hills at Simla, also has a defi me
breeding season, and I have very strong evidence that the
species living around Muttra in the plains has a definite bre in-
time, although it is a different time from that given me b ich
Aitchison for M. rhesus at Simla. still

Although absolutely regular menstruation throughout the more not definitely proved for all species of monkeys, still it is quite certain some of them menstruate during the nonbreeding period, and this is a fact to be noted, for it would appear to be a connecting link between the lower mammals who come on "heat" only at breeding times, and the human female who is, generally speaking, capable of breeding at all times. This relationship is brought still closer by the facts that some women, of peoples who live very far north, do not regularly menstruate during the winter months, and that a special breeding season among human beings is not only suggested by the customs of widely-separated peoples but is actually observed by some of them.

The historical phenomena of menstruation, exhibited by S. entellus and M. rhesus, is divided into four periods. Periods of rest, of growth, of degeneration, and of recuperation. The period of growth shows two well-marked stages, the growth of stroma and the increase of vessels, while the period of degeneration has four well-marked stages, the breaking down of vessels, the formation of lacunæ, their rupture, and the formation of the menstrual clot.

Two processes of peculiar interest are noticeable in this menstrual history—the behaviour of leucocytes and the remarkable adaptability of the uterine mucosa tissue. The leucocytes are early attracted to the peripheral vessels, presumably by the degenerative changes which are going on in the tissue there; they arrive in great numbers, but the waste products are otherwise disposed of, by the denudation of the superficial mucosa, before the great majority of leucocytes have time even to attack the offending degenerate tissue. Many of them are contained in the discarded tissue, but few migrate from the vessels, and large numbers are to be seen adhering to the ruptured walls of the vessels; later they are again seen within the newly-formed vessels retiring from the field. This is what happens during healthy menstruation, but in cases of suppressed menstruation they are probably actively engaged, and in many diseases of the menstrual organ play a very important part.

As regards the adaptability of the mucosa tissue, it is chiefly of interest as evidence of the archaic nature of that tissue. The devastation witnessed within the uterus when the mucosa is denuded is astonishing, and yet a few days afterwards it is again possessed of glands, blood vessels, and superficial epithelium. This happens every month, and it is a remarkable feat of which no other organ in the mammalian body is capable. Moreover, it is noticeable that by far the larger number of capillary blood vessels, together with some of the pithelium, is formed from the indifferent elements of the mucosa—a mnant, it seems, of that power of reproducing lost parts which some he lower animals possess.

review of the various modern views of menstruation in the an female leads to the opinion that it will be found that while istological phenomena accompanying menstruation in the latter iffer somewhat in detail from those in monkeys, they are prac- identical processes; further, menstruation and "heat" are very more similar than has hitherto been recognised.

With regard to the relation of ovulation to menstruation, if it is granted that menstruation in monkeys is the same process as menstruation in woman, then it can definitely be stated that ovulation does not occur during each menstrual period, and that it does not necessarily occur during any menstrual period. In S. entellus and M. rhesus I have shown that menstruation frequently occurs without ovulation —probably this is the case during the whole of the non-breeding season; while Leopold and Miranoff have shown that ovulation may occur independently of menstruation in the breeding human female.

The want of power to ovulate is no doubt one of the causes of sterility, and the importance of all considerations dealing with the process of ovulation is obvious to those who have to combat sterility. It is a fuller knowledge of the cause of ovulation which is required and it is hoped it will be forthcoming and be found of assistance to those who desire to induce ovulation.—Mr. Walter Heape, of Trinity College, Cambridge, in *Brit. Med. Jour*, Dec. 24, 1898.

CLINICAL RECORD.

Foreign.

Cases of Hæmoptœ.

BY DR. ROBERT STAEGER.

1. On the 25th of February, 1897, I was consulted by a sculptor, 29 years of age, on account of hæmoptœ attended with a dry cough, from which he had been suffering for three weeks, during which time he had fallen off a great deal. At times the saliva was only tinged with blood, at other times it was all of blood-color. There was no scorbutic state of the gums, the blood came from the lungs.

An examination showed a dull sound in the supra-clavicular and the infra-clavicular regions on both sides, with a dry rattle of small bubbles, attended with *some metallic tinkling on the right side.* On both sides there was bronchial respiration. The diagnosis was clear; there was a tuberculosis of the lungs and the blood, *i e.*, the bloody sputa, came from a small cavity which, according to the examination was on the right side.

Looking to the ætiology of the hæmoptysis, I prescribed *Arsenicum jod.* 4, a piece as large as a pea, taken dry three times day. The effect was truly striking. When he returned in a week he complained neither of spitting blood nor of cough. His appetite also, which had failed him entirely, was coming back. Percussion, indeed, still showed a dull sound on both sides, but auscultation showed no more which pointed to lycopodium. Other indifferent symptoms were constipation alternating with diarrhœa, stools hard, varying in colour; *a sluggish feeling in the limbs and aching in the calves after dinner, which might have occurred under either medicine.* I gave lycopodium 3x the first choice, and kept the patient steadily on it for a month. During the first fortnight there was considerable improvement, but the patient relapsed while continuing the medicine. I then discontinued the lycopodium and gave bryonia 3x, when the case got well at once, in the magical way which we often see when our medicines are properly selected.

Case VIII.—This was a plainer case, but one in which I nevertheless made a wrong choice at first. M. M., aged 25, a housemaid, complained of constant pain under the ribs on the left side, as if enlarged and forced out, which had lasted for more than twelve months. The food seemed unable to pass this painful place. This pain, which had also a feeling of weight with it, felt as if it pulled down the left eye and throat and all down the left side, and there was actually some ptosis of the upper eyelid, *i.e.*, the lid drooped. The catamenia were regular. She was low spirited and tired. The bowels were very constipated, being never opened without artificial means, and there was a moist, itching, tender eruption at the anus of eczematous character. No doubt pulsatilla was the better indicated remedy, but I gave lycopodium on account of the eruption at the anus. The result was that the constipation was much relieved and the eczema round the anus completely cured, but the other symptoms not affected at all. On changing to pulsatilla, they got better at once.—*Journ. Brit. Hom. Society*, Oct. 1898.

THERAPEUTICS OF CONSTIPATION, DIARRHŒA, DYSENTERY, AND CHOLERA.

156. MAGNESIA SULPHURICA.

Constipation:

1. *St. hard (1st day after continued doses); soft (2nd and 3rd days)*; no st. (12th day); afterwards regular.
2. St., of only a few hard pieces like nuts, evacuated with great pressure, preceded by griping beneath umbilicus; after an hour ineffectual urging and pressure, followed after half an hour by a satisfactory hard, later a loose st.
3. The usual st. did not occur at noon (2nd and 3rd days), but in the evening (3rd day), was tenacious, soft, unsatisfactory, and evacuated with effort.

Diarrhœa:

1. Soft and hard st alternately, though not regularly.
2. St. soft but unsatisfactory, followed by more watery fæces at noon; afternoon, 4 profuse watery sts. evacuated suddenly without pain, only with the last, at 11 P. M., a slightly painful sensation in umbilical region.
3. Soft st., with burning at anus; followed by tenesmus.
4. Soft st. for several days, previously hard sts. with pressure.
5. Thin, painless sts. in forenoon; in afternoon, much rumbling and audible noises as if D. would come on.
6. Purging four times, with great thirst; next day, a hard st.
7. Purging, preceded by distension, emission of offensive flatus, and rumbling in abd.
8. D. five times from noon till evening, preceded by rumbling and accompanied by twisting pains in abd.

Before St.:

1. Distension and rumbling in abd. Twisting pains in abd. Griping in umbilical region. 2. Emission of offensive flatus.

During St.:

1. Burning at anus. 2. Great effort. 3. Twisting pains in abd.
4. Griping or slight pain in umbilical region. Generally no pain.

After St.:

1. Ineffectual urging. Tenesmus.
2. Rumbling and audible noises.
3. Relief of distressing sensation of heaviness of lower abd. and dulness of head.

General Symptoms:

1. Lively and joyous, or depressed and lachrymose. Out of humor, fretful, easily roused to anger. Disinclination for all business. She thought she was not in her right senses; constantly saw several strange persons about her, though conscious of the illusion.
2. Vertigo, in morning; even to falling forward during and after dinner; with heaviness of head. Dulness of head on rising in morning, disappearing an hour after. Heat in vertex, and pain as though hair were pulled.
3. Eyes burn all day, without being inflamed. Movement causes

violent pain in eyes, especially in right as if it would protrude from its orbit. Photophobia, with lachrymation.

4. Loud noises in left ear, at one time ringing, at another roaring like water, frequent but intermittent.
5. Profuse fluent coryza, with stoppage of left nose, with loss of smell. Coryza and cough, as the cough disappears the coryza becomes worse. Nosebleed, sometimes with, sometimes without relief of the head troubles.
6. Tearing in bones of face (right side); violent tearing in left zygoma. Burning in lips with dryness.
7. Toothache, especially on entering the house from open air, worse by warmth and cold and by contact of food. Tongue coated, or raw. A blister on left margin of tongue, with cutting pain Mouth and throat very dry, with a sweetish bitter taste. Bitter taste in morning on waking, disappears after breakfast.
8. Mucus in throat, which he could neither swallow nor raise up. Dryness and pain in throat, even when not swallowing.
9. Entire loss of appetite. Aversion to all food, even when thinking of it, with nausea, especially to meat and warm food. Aversion to tobacco. Thirst in the morning after rising, disappearing after breakfast; also in evening, especially in the house. Bitter eructations, tasting of the food eaten the previous day, also tasting of bad eggs. Frequent collection of water in the mouth, that rises from the stom. Nausea, even unto vomiting. Feeling of coldness in stom. with qualmishness.
10. Stitches in left hypochondrium. Burning beneath umbilicus. Violent stitches about umbilicus, worse from motion. Abd. distended, but soft and painless; or abd. tense, hard, and stiff though he had eaten but little. Violent pain in abd. at night, preventing sleep. Pinching, griping in abd. as from a purge. Disagreeable heaviness low down in abd., with sensitiveness in inguinal region, relieved by emission of flatus.
11. Stream of urine intermits and dribbles, with burning in orifice. Urine copious, light yellow, soon became turbid and deposited a copious red sediment.
12. Thick leucorrhœa as profuse as the menses, with weary pain in small of back and thighs. Burning leucorrhœa, on moving about Menses too early, thick, black, and more profuse than usual.
13. Trembling of whole body, weakness of feet; indolent, weak, sleepy, unfit for all earnest work. Sleep full of dreams. Sweat and thirst after midnight, therewith chilliness.
14. Staggering, imperceptible pulse, slow and difficult breathing, extreme debility, and death within ten minutes, without vomiting (Poisoning of a boy with 2 ounces).

This drug is late in producing its effects, then acts strongly; its action intermits, and is renewed with increased vigor.

Gleanings from Contemporary Literature.

A CLINICAL LECTURE ON THE SLEEPING SICKNESS.

Delivered at Charing Cross Hospital, October, 1898.

By Patrick Manson, M.D., LL.D., F.R.C.P.,
Medical Adviser to the Colonial Office: Physician to the Seamen's Hospital Society Branch Hospital, Albert Docks

Gentlemen,—I propose to speak to you this afternoon about the two negro boys who have been in Alexandra Ward for the last few weeks. They came from a village called Mbanza Manteka, on the Lower Congo, and were brought to England principally through the instrumentality and enlightened benevolence of Dr. Grattan Guinness and the missionary body he represents. They were brought to this country partly that they might have the chance of treatment under conditions more favourable than any their own homes could supply, partly that they might afford an opportunity for careful study of the deadly disease from which they are suffering. Although it is not likely that any of you, unless you should visit the West Coast of Africa, will ever see similar cases again, nevertheless their study is capable of affording useful lessons of a practical character. Apart from such practical consideration there is much about these cases of theoretical interest. If the medical student aspires, as he should aspire, to be a student of medicine, he must be catholic, and embrace in his studies all forms of disease, no matter though some of these diseases happen to be confined to a limited geographical area, no matter though they affect only what we, in our pride, consider an inferior race. The science of pathology embraces black men as well as white men; the principles of pathology are the same for all.

Nomenclature.

The disease from which these negro boys are suffering is called the "sleeping sickness;" sometimes, and because it is especially prevalent there, the "sleeping sickness of the Congo;" sometimes "negro lethargy." A better name would be "African lethargy."

Geographical Limits.

It has a singularly limited geographical distribution, being, so far as we at present know, absolutely confined to that part of West Africa which lies between the Senegal to the north and Loanda to the south, some 1,500 miles of latitude. It extends into the back country; how far it is difficult to say. I am told by Dr. Sims, of Stanley Pool, who has had many years' experience of Congoland, that it occurs as far up the Congo as Stanley Falls, that is to say, to the very centre of equatorial Africa. So that, after all, the geographical limitations are not so restricted. The area involved, though large, like everything that is at a distance from us, bulks small in the mind's eye. It probably exceeds that of Europe; it certainly carries a population of several tens of millions.

Although widely diffused throughout this huge region, fortunately for the inhabitants, it is only here and there, in certain circumscribed spots, in certain villages, or groups of villages, that sleeping sickness occurs as an endemic affection. Nor is it always equally prevalent in those places. *In the spots affected it seems to come and go, to wax and wane as it were. And it is fortunate that it is so, for, when sleeping sickness breaks out in* a community it attacks a large proportion of the members of that community, and all who are attacked surely die.

MORTALITY IN EPIDEMICS

Thus in the village from which these boys came, out of a Christian congregation of about 1,000 last year 28 died of sleeping sickness, and this year, Mr Richards tells me (it was Mr Richards who brought these boys home), that up to the month of August, when he left the Congo, out of a congregation of about 1,100 28 had already died, a mortality at the rate of about 40 per annum. Corre, a French writer, who studied the disease in Senegambia, tells us that in some districts of the Lower Senegal it sweeps away whole villages at a time, half the people dying, the remainder fleeing from the pestilence.

RACIAL PROCLIVITY

Hitherto we have no well authenticated account of the disease in a white man, doubtless, however, were the white man exposed to the cause, whatever this may be, he would prove as susceptible as the negro. It has been met with in half breeds and in Moors. Some have suggested that sleeping sickness is in some way inherent and peculiar to the negro, a sort of ethnic disease. This cannot be the case, for the negroes of the States of the West Indies and of Brazil, and the natives of north, east, and south Africa never, so far as we know, nowadays get the disease. I say nowadays because formerly, in the old evil times of slave trade, sleeping sickness was well known on the plantations in the West Indies, but it was then known only as an imported disease. It never attacked negroes born on the plantations, only those who had been kidnapped in Africa. It did not spread on the plantations, or become domiciled, as it were, in America. I beg of you to note this circumstance, it is an important one to keep in mind in connection with the question of etiology.

PROLONGED LATENCY

Another significant fact about the disease is that it may remain latent for years—as long as seven years it is said. Thus, in the evil times I refer to, what appeared to be a healthy slave might be landed in the West Indies, and might do excellent work for his owner for several years, and then, without apparent reason, he would begin to exhibit symptoms of sleeping sickness, and by and by die of the disease.

Some years ago a little Congo boy was brought home to England, and placed in a training school in Wales. Here he worked for three years in apparent health, but at the end of this time the sleeping sickness laid hold of him, and he died. This is a well-authenticated case. The negroes themselves say that a man is never safe from sleeping sickness until seven years have elapsed after a visit to a sleeping sickness district. This prolonged latency is another important fact which I would also ask you to bear in mind as having a bearing on what I shall advance later on about the etiology of this singular disease.

Before proceeding further I will give a summary of what we have been able to learn and observe about our cases. The account is very incomplete, as there are linguistic difficulties which, as you will readily understand, make it difficult to get clear and reliable information about the subjective symptoms as well as about the medical histories of the cases.

Case I.—Eli Mboko, aged about 20, until his present illness began had the reputation of being an exceptionally bright and intelligent lad. He taught himself English, built his own house, and in many other ways displayed an amount of enterprise unusual in a negro. He was regularly employed as a teacher in the mission school at Mbanza Manteka, a village in the hilly country on the south bank of the Lower Congo, and a notorious haunt of sleeping sickness.

He discharged his duties with ability and energy until about twelve months ago. He than began to be listless and vacant-minded. He would now lie abed in the morning, neglect his work, and cease to take an interest in his former occupations and amusement. Mrs. Richards, who superintended the school, told me that on several occasions she found him standing motionless in the middle of the class-room regardless of what was going on around, and simply gazing into vacancy. When she spoke to him he would rouse himself and resume his work, but presently he would relapse into the same listless, vacant condition. He complained of headache, particularly occipital headache, and at times fever. By May of this year he was quite unfit for work; his gait had become tottery and uncertain, and he drowsed or slept most of the time. He never had any fits or maniacal attacks. He volunteered to come to England, and left the Congo on August 27th. He improved somewhat on the voyage, for when I fetched him from Bow on the day of his arrival in London—September 24th—though very quiet and reserved, he appeared to be wide awake, taking an interest in the traffic in the streets as we drove along to the Hospital. He was quite able to walk upstairs to Alexandra Ward.

On admission under Dr. Abercrombie he seemed to be in good general health. He was fairly well nourished, and even sleek. Lately, however, he has fallen off somewhat in condition, and his hair and skin have become dry and lustreless. At first his breath was offensive; this has now improved. His appetite and digestion are vigorous. The bowels on admission were constipated—as indeed, they still are. Microscopic examination showed that the stools contained large numbers of the ova of ascaris lumbricoides, of ankylostoma duodenale, and a few of trichocephalus dispar. The thoracic and abdominal viscera appeared to be healthy. There was no sugar or albumen in the urine. Temperature has ranged from 97 to 99 F., being usually slightly subnormal. Pulse 80 to 90, respirations 20. The blood count gave 5,300,000 per c.mm., hæmoglobin 60 per cent. The blood contained no malarial parasites, but filaria perstans was, and is, present in moderate abundance—about 1 filaria in every c.mm. The senses were, or appeared to be, normally active. Mr. Treacher Collins, who was good enough to make an opthalmoscopic examination, found fundus and media perfectly healthy. The pupils were equal and reacted briskly both to light and accommodation. A very few and ill-defined papules could be made out on the skin of the chest and abdomen, but there was no pustulation and no marked pruritus. The knee-jerks and other deep and superficial reflexes were active; but his gait was shuffling and feeble, and his hand grasp was markedly impaired. When he walked he progressed slowly, his knees slightly bent. He was easily fatigued, and always seemed glad to sit or lie down. There was no muscular tremor, no local anaesthesia, no paresis The lymphatic glands, particularly those of the neck, were slightly but distinctly enlarged. In size they varied from an almond to a hazel nut; they were not at all tender.

Since admission his condition has varied very little For the most part he keeps his bed, lying perfectly still with eyes shut, as if asleep. His face has an expression of deep melancholy. At times he sits up by the fire, but even then he seems to be asleep. The only time he rouses himself thoroughly is when food is brought, or when for a short time he goes on the balcony and watches the traffic in the streets As a rule he is glad to get back to bed. A touch or a loud sound causes him to open his eyes, so that if he is asleep, the sleep must be a very light one When spoken to he opens his eyes and answers questions slowly, in few words, and to the point. Even while he is being spoken to often his eyelids fall as if he were overpowered by an irresistible desire to go to sleep. He never seeks to enter on, or to prolong, a conversation. He rarely smiles; if asked, he says he is very unhappy on account of his drowsiness. Since he entered hospital he has become distinctly more lethargic, and, I think, has lost flesh and muscular power

CASE II.—Tonda Mkaloo, supposed to be about 11 years of age, comes from the same village, Mbanza Manteke, as Mboka Very little is known about his antecedents He is believed to have shown symptoms of sleeping sickness for about two months, that is to say, since May or June, before he left the Congo. During the voyage home he became much worse. When brought to hospital he was in a state of great emaciation and weakness He could not walk without support, and was barely able to stand alone; he had to be carried upstairs. His cheeks were sunken, his eyes unusually prominent, his lips were swollen and dry, the saliva dribbling constantly from the corner of his mouth; his hair was dry and scurfy, and his skin harsh and lustreless. Arms, abdomen, and chest were streaked with white lines, nail marks from the scratching provoked by an incessan pruritus associated with numerous scaly papules. The superficial lymphatic glands and even trunks were universally enlarged, particularly so those on the back and sides of the neck. Some of the gland appeared to be very tender, for he carried his head stiffly as if movement hurt him, and he shrank and cried when an attempt was made to examine the little swellings distinctly visible at the side of the neck.

His breath was foul, and his abdomen tumid and lax. The spleen was much enlarged, extending as far as the umbilicus; the liver also was enlarged, its lower border being readily felt about a hand's breadth below the costal margin. As in the case of his companion, his fæces contained myriads of ova of ascaris lumbricoides, ankylostoma duodenale, and trichocephalus dispar, and he was markedly constipated.

His temperature was considerably above normal for some days after admission. Eyes, lungs, heart, and kidneys appeared to be healthy

The superficial and deep reflexes were active. He slept and drowsed almost continuously during the first few days. At first he had to be coaxed to eat, and had often to be fed by the nurse. Sometimes he would fall asleep at his meals. There was some suspicion of muscular tremor.

His blood count gave 4,500,000 per c.mm., and a hæmoglobin value of 50 per cent. Filaria perstans was found in considerable abundance—8 per 5 c.mm. No malaria parasites were discovered.

After due preparation he had a course of thymol (15 grains for four doses at intervals of an hour and a half); this effectually rid him of his intestinal parasites. Probably partly in consequence of this, partly in consequence of the warmth and good feeding, and partly in consequence of the large doses of arsenic he was put upon, his general health quickly underwent a marked improvement, and his spleen and liver diminished in size. Concurrently with this his drowsiness got less, and he is now much more lively; he even laughs occasionally. He sits up in bed or by the fireside and watches what is going on about him. He is also putting on flesh, and is able to walk about a little, though his gait is slow and shuffling. The pruritus, however, is as bad as, or even worse than, ever. His lymphatics, though diminished in size and no longer painful, are still distinctly enlarged. The prominence of the eyes is less marked; he no longer dribbles from his mouth, and he feeds himself and eats with some appetite. He has had one or two feverish turns, but, as a rule, his temperature is normal or subnormal.

So much has he improved during the few weeks he has been in hospital that we are sometimes tempted to think, were we not assured to the contrary by those familiar with sleeping sickness, that the diagnosis may be wrong. We are told, however, that there can be no doubt the little fellow is the subject of this disease, and that ere long the old symptoms will recur with increased severity, and that others of a graver character will by and by be superadded.

From these accounts you will be able to form some idea of the earlier phases of one type at least of sleeping sickness.

SYMPTOMS.

Onset.—A negro, otherwise apparently in good health, is unaccountably smitten with a gradually increasing mental and [illegible] lethargy which goes on deepening in intensity until he is bedridden. Those who are familiar with the disease, including very often the patient himself, can recognise the earliest threatenings of the impending calamity. There is a characteristic expression of face and body; a significant droop of the upper eyelids; a listless carriage of the body; an indifference to old amusements and occupations; a stolid, a rather mournful expression of countenance; perhaps slight puffiness of the features. It is noticed that the patient is easily tired at his work; that he lies along in bed in the morning; that he often falls asleep, even at his work; that he becomes morose and unsociable, and ceases to take a share in conversation. Nevertheless he will answer intelligently and to the point when addressed. He may have to be asked once or twice before he replies and the answer when it comes may be a brief one; but, from the appropriate nature of the answers, it is evident that questions are properly, though perhaps slowly, comprehended.

The Sopor.—While you speak to him his eyelids may fall and sleep seemingly overpower him. This is very apparent in the elder of these two boys. If you put the question to this lad he may tell you that he has headache, and he can be got to indicate with his hand the aching part but he never spontaneously complains of his suffering. People may be talking all around, but apparently he takes no notice of what they are saying, although an unusual noise or a light touch may make him open his eyes for a moment. If he is really asleep at these times the sleep is a light one. The condition seems to be one of mental vacancy rather than one of true sleep.

Muscular Debility.—Equally striking is the muscular debility from which both patients suffer. Their movements are all languid; and they are very easily tired out. Sitting up for an hour or two in a chair in the afternoon thoroughly exhausts them, and they are glad to get back to bed. When they walk they shuffle along, sometimes tottering like one half asleep or like a drunken man; their knees seem to give way under them.

At first sleeping sickness patients can feed themselves, although they may take a long time over it. The little boy takes an unconscionably long time over dinner. He pauses between each mouthful, gazing into vacancy the while; he has to be reminded now and again that he is dining. Sometimes such patients will fall asleep with the morsel half way to their mouths, or even with the half chewed food between their teeth, and may have to be wakened up to swallow it. At a later stage of sleeping sickness muscular tremor usually sets in; sometimes this is so marked, even at an early stage, that the patient can no longer feed himself.

Early Nervous Symptoms. The symptoms of the disease, at all events at this stage of its progress, point to a pathological condition of the higher nerve centres only. The knee jerks and other reflexes are intact, there are no bladder nor rectal symptoms; no trophic lesions. The discs and fundi are perfectly normal. Nutrition is not impaired, and digestion and assimilation are satisfactorily performed.

General Symptoms.—From the commencement the patient may be subject to short daily spells of feverishness: or he may have a high temperature for several days on end. Fever, however, is not, as a rule, of an urgent character, unless there is concurrent malaria. Occasionally there may be a little diarrhœa. At other times, and as a rule, the body temperature is subnormal—96 or 97 F. Such patients evidently feel chilly, for they like to coil themselves up in some sheltered spot and bask in the rays of the broiling tropical sun.

Skin Lesions.—A very striking and common symptom in sleeping sickness is the intense pruritus from which many of the patients suffer. It is especially marked on the trunk, but it occurs elsewhere. Little papules can be seen in many places, especially about the chest and abdomen. In healthy young negroes the skin is soft and glossy, like velvet; but in this disease—as is particularly apparent in the younger of these boys—it becomes dry and lustreless, and is generally scored all over with the white streaks produced by the incessant scratching. If you notice the elder of the two boys you will often see him carry his hand to his nose or forehead, and rub the part as if it were irritated.

Enlarged Glands.—Another and interesting feature of sleeping sickness is an enlargement of the lymphatic glands, especially of the posterior cervical. In some instances, as in the smaller boy, less so in the elder boy, most of the superficial glands are affected. The individual glands can readily be felt enlarged to the size of an almond or of a small nut. In the little boy at one time the posterior cervical glands on the right side appeared to be painful, for he would cry when his head was moved; he held his head rather stiffly, apparently in consequence of subacute cervical adenitis.

Progress of the Disease.—For a long time, perhaps for several months, this is about all that can be made out in the type of sleeping sickness we are considering. Some days the patients seem a little brighter, some days they seem a little duller. Occasionally they become quite active and intelligent, and it may even seem that they have recovered. Such improvement, I am assured, is invariably only temporary; sooner or later the lethargy returns, and the disease once more advances to the inevitable and fatal issue.

Convulsions and Mania.—In certain instances, and by no means rarely—and this is the other type of sleeping sickness I have hinted at—the disease is introduced by, or its progress is interrupted by, maniacal outbursts, not infrequently by epileptiform seizures, very like those of general paralysis of the insane. A whole series of convulsive fits may follow one after the other. The maniacal outbreaks may take very different forms—delusions of all sorts, hallucinations, homicidal or suicidal impulses. These epileptic and maniacal outbursts are supposed to be characteristic of the more acute cases; such cases are believed to advance more rapidly than the purely lethargic ones. I asked Mr. Richards why he did not bring a case of this description home. He told me that it would have been very difficult to have managed such a patient on board ship, that very probably he would have jumped overboard in a maniacal fit, or, at all events, he would have been an intolerable nuisance to his fellow passengers.

Terminal Symptoms.—Whatever may have been the exact characters and progress of the earlier phases of the disease, ultimately the patient becomes completely bed ridden. Nutrition now begins to suffer, if it had not done so before. Choreic, convulsive, or tetanic spasms of groups of muscles or, it may be, of a more general character, in addition to the tremor already mentioned, are apt to occur from time to time, indicating grave implication of the motor centres. Muscular prostration is now extreme, torpor more profound and continuous. Bedsores may form, or diarrhoea or other complication set in and carry off the patient, or he may die in one of his convulsive or tetanic seizures. Some years ago there was a case of this disease under Dr. Stephen Mackenzie in the London Hospital. I saw this man when he was dying. For hours his head was violently retracted by tetanic contraction of the extensor muscles of the neck, and every now and again he seemed to be on the point of asphyxia from spasm of the glottis. The disease may run its course in two or three months, or it may last for as many years. Nine months seems to be about an average time.

PATHOLOGY.

Although a considerable number of *post-mortem* examinations of cases of sleeping sickness have been recorded, little, if any, light has been thrown by them on the morbid anatomy or pathology of the disease. In some of the records, fulness and even varicosity of the vessels is reported; in other instances the vessels are described as being empty. In some instances the brain substance was said to have been abnormally hard; in other instances abnormally soft. In the earliest recorded *post-mortem* examination the pineal body was found to be enormously enlarged; in subsequent examinations this condition has not been remarked. In Dr. Stephen Mackenzie's case, beyond a cysticercus on one of the anterior lobes of the cerebrum, no morbid lesion of the brain was detected; certainly there was no meningitis, and no gross lesion of the cerebral substance.

Natural sleep, as you are aware, is associated with, and probably depends on, anæmia of the brain. Morbid sopor depends sometimes, apparently, on the direct action of a toxic substance on brain cells; sometimes on a cerebral anæmia produced by the presence of a tumour, or by an action of the toxic substance on the intracranial circulation. In which of these ways the sopor of sleeping sickness is produced it is as yet impossible to say. I have sometimes been tempted to think that perhaps in these cases the pituitary body is the original seat of disease, and that the brain becomes secondarily affected. Such a hypothesis receives some, though I confess very slight, support from experimental physiology as well as from recorded cases of disease of this organ. I can only hope that our cases may yet throw much needed light on the nature of what is at present a pathological puzzle.

[NOTE.—After the delivery of this lecture I received on October 27th a letter from a friend on the Niger giving some particulars of the *post mortem* examination of a case of sleeping sickness. The pituitary body was found to be enlarged. There was an old blood clot on or in it, and, as I gather, some cystic formation as well.]

ETIOLOGY.

It has often been asked, What is the cause of sleeping sickness? I cannot give any decided answer to that question, but we may very properly seek in the symptoms, distribution, and, so to say, the natural history of the disease for some indication as to this important point.

Sleeping sickness has been attributed to all manner of things, amongst others to sunstroke; but the case I have alluded to as having developed in Wales effectually upsets such an idea; a Welsh sun is not likely to penetrate a negro's cranium. It has also been attributed to the inordinate consumption of palm wine—a common vice in the negro ; to excessive venery ; to the use of improperly prepared manioc—the staple food of many of the negro tribes, and when improperly prepared apt to be poisonous. Manifestly it can be due to none of these things, for children, who are just as subject to the disease as are adults, do not drink intoxicants, do not indulge in sexual excess ; and even negroes, when they visit Wales, do not feed on manioc. In the slave days it was sometimes attributed to nostalgia, to grief at being torn from home and friends ; but at the present day, at all events on the Lower Congo, there is nothing of this sort. Like all tropical pathological puzzles, sleeping sickness has been attributed to malaria—that blessed cloak for ignorance ; but there are none of the clinical or pathological marks of malaria about the disease. It is true that one of our patients has an enlarged spleen, but the type of the fever he some times suffers from is not that of malaria. Moreover, I have examined his blood carefully on several occasions and found no plasmodia, no pigmented leucocytes. The other boy's spleen is not enlarged. In neither is there marked anæmia, such as there is invariably present in pronounced malarial cachexia. Some years ago two Portuguese pathologists declared that they found a specific bacterium in a case of sleeping sickness, and that they communicated the disease to the lower animals by injections of cultures of this bacterium. Dr. Bullock has attempted to grow a bacterium from the blood and lymphatic glands of one of the patients but his flasks have remained sterile. No ; sleeping sickness can be attributed to none of these things.

There are some circumstances which, to my way of thinking, seem to suggest a clue that is well worth following up. I have already told you that sleeping sickness is limited to a certain region of Africa. In the endemic districts it attacks old and young, but especially the latter, particularly those between the ages of 10 and 20. It may pick out one or two in a household, or it may attack an entire family. Mr. Richards tells me that he heard on the Congo of an instance in which it was introduced into a hitherto immune village by a case that came from a neighbouring infected village ; a circumstance suggesting transmission more or less direct of some form of infection. Indeed, the natives say that it is infectious ; they say, doubtless erroneously, that the saliva, which sometimes dribbles from the corner of the mouth in advanced cases, conveys the disease. All these facts are compatible with and suggest a living contagium.

I have also told you that it may remain latent for many years, and develop ultimately thousands of miles away from the endemic centre—that is, from the spot where its cause was acquired. There are many disease germs which are capable of remaining latent for years, and then of springing into pathological activity—tubercle and leprosy, for example. But then, these diseases differ from sleeping sickness inasmuch as they are not confined to limited geographical areas ; and, moreover, when introduced into virgin populations, being directly communicable like all bacterial diseases, they spread. Sleeping sickness will not spread. Why does it not spread ? Manifestly because it depends on certain local conditions, conditions found only in limited districts in West Africa. This implies that these conditions exist only outside the human body ; and, moreover, that these conditions cannot be transported.

This further implies that sleeping seekness depends either directly on a food of some sort peculiar to West Africa ; or directly or indirectly, on some plant or animal equally limited in its geographical distribution. In Nature it is only such things as these that are geographically limited in the way that sleeping sickness is limited. Did it depend on a food—that is to say on some organic poison in food, it is strange that the manifestations of the poisoning are at times delayed for years. It must therefore depend on some plant or animal. Further, the phenomena of the disease, the prolonged latency especially, demand that the cause must be something which can remain alive, though it may be pathologically inert for a very long time.

FILARIA PERSTANS.

When in difficulties about the explanation of some obscure pathological or other phenomenon, in the absence of a better guide it is perhaps permissible to turn for assistance to analogy. Let us try if analogy will help us in our present dilemma, for there is an *a priori* probability that like diseases are produced by like causes. Let us first formulate precisely what it is we want from analogy. Are there any diseases which, like sleeping sickness, although produced by a living cause, can remain latent for prolonged periods, and which, moreover, can be acquired only in certain limited spots, are not directly infectious, cannot be introduced into virgin districts, and which depend directly or indirectly on the fauna or flora of their endemic areas ? Yes ; there are malaria, elephantiasis. and many others which I could mention. Why are these diseases so limited ? Recent investigations enable us to answer this question. It is because their specific germs—the plasmodium in the one case, and the filaria in the other—before they can enter the body of man have to pass through the bodies of certain of the lower animals, which animals are so constituted that they can live only in certain more or less limited geographical or rather zoological areas.

If this be the case in the diseases mentioned and exhibiting the peculiarities enumerated, the same explanation may apply to other diseases with similar peculiarities. I think, therefore, that the germ of sleeping sickness in this respect resembles that of malaria and that of elephantiasis—that is to say, that at one stage of its existence it must necessarily live in some living host other than man ; some animal or plant found only in the equatorial regions of West Africa.

There is one fact about sleeping sickness that greatly encourages this hypothesis, as it fits in exactly with such a view of the etiology of the disease. A peculiar parasite—filaria perstans—has been found in the blood of both the patients which you have seen. Moreover, this same parasite was found in the blood of the other patient whose case was studied in London some time ago—Dr. Stephen Mackenzie's case. The particulars of this case are fully recorded in the Clinical Society's *Transactions*, vol. xliv.

In fact, it was in the blood of the latter patient that this parasite was first discovered. Dr. Mackenzie told me that his house physician (Mr. Fagan) while examining the blood, had found in it what he took to be the ordinary blood worm—filaria nocturna. Dr. Mackenzie remarked, however, that some of the worms appeared to be larger than others, and, knowing that I took an interest in this class of parasite, he asked me to look at them. I procured slides of the patient's blood, and carefully studied the worms. I remarked that the larger worm differed not only in size, but also in shape, in structure, and in habit, from the smaller. You are aware that the ordinary filaria of the blood, filaria nocturna, is an active, wriggling creature, about 1-75th inch in length by about 1-3000th inch in breadth; that it has a sharp-pointed tail; that it is enclosed in a loose trailing sheath or sac; that although it wriggles about, it practically remains at one spot on the slide, and does not locomote; and that it comes into the peripheral circulation only during the evening and night. Now this new worm was only about 1-125th inch in length by about 1-5000th inch in breadth; it had a blunt tail; it had no sheath; besides wriggling about, it travelled through the blood on the slide, often at a great rate; further it was present in the peripheral circulation at all hours of the day, as well as of the night. Manifestly it was a new species.

Naturally enough the concurrence of a strange parasite in a strange disease suggested, though it by no means proved, a cause-and-effect relationship between the two. Accordingly I set to work to find out something more about this new worm, among other things its geographical range, its degree of prevalence, and if it were invariably, or often, present in sleeping sickness. I procured slides of blood from hundreds of natives of different parts of Africa and of the tropical world. I found that it was only in slides procured from Congoland and from one or two other parts of West Africa that filaria perstans occurred. It does not occur, as far as I have been able to ascertain, in Egypt, in East Africa, or in South Africa. I also obtained strong evidence that it does not occur in Dahomey, nor in the Illorin district in the Niger bend, districts where, although well within the geographical limits of sleeping sickness, that disease does not originate. I also found this filaria in blood sent me from cases of sleeping sickness on the Lower Congo. But when I came to investigate the degree of prevalence of filaria perstans in its geographical area, I seemed to find too much. I found that quite 50 per cent. of the healthy inhabitants of Congoland and of some other West African places harboured this parasite. This fact of course told against the theory that the new filaria stood in causal relationship to sleeping sickness. After all, their relationship might only be one of concurrence—a very different thing from cause and effect. In other respects, however, the new filaria seemed to fulfil all the requirements. It could be acquired only in a very limited area; it could be carried in a patient's body and live in a foreign country for years. I found it in the blood of a negro who had not been near Africa for over six years. Like other parasites of its class it could very well exist without causing disease. From its nature we know that it cannot spread by direct infection, but that it must first pass through the body of another animal; and, for the same reason, that it cannot be introduced and become domiciled in a virgin country where this other intermediate animal does not occur. We come to this then, that though there are some facts pointing to an intimate relationship between the parasite and the disease, yet the extreme frequency of filaria perstans, and the relative rarity of sleeping sickness in the endemic area seem to be strong arguments against this parasite being the cause of the disease.

At the same time we must bear in mind that there are many parasites which, though sometimes pathogenic, are nevertheless generally innocuous. Filaria nocturna, for example, does not by any means always give rise to elephantiasis; the cysticercus does not always become lodged in the vitreous humour and destroy the eye; distoma Ringeri does not always stray to the brain and cause Jacksonian epilepsy; hydatids do not always produce disease of the lungs or liver; so it may be with filaria perstans. It might very well be that it is only in a certain possibly small proportion of instances that it gets into a position to damage the encephalon. Similar parasites are known to be great travellers and to hunt each other, as it were, through the tissues of the body. Filaria Loa, for example, may be felt one day in the connective tissue of a finger, and a few days later may be crossing the eye under the conjunctiva; in fact, it can be seen thus travelling about. The guinea-worm is also a notorious traveller; so are the young trichina and hundreds of other parasites. It is therefore quite in conformity with the teachings of analogy that filaria perstans may occasionally wander into some tissue, either in the brain or connected with the brain, and so in certain individuals set up serious cerebral disease, whilst in other and in the majority of cases it does not do so. This is quite conceivable. The fact of the presence of filaria perstans in a large proportion of people who may never suffer from sleeping sickness is therefore not an insuperable obstacle to accepting it as a cause of this disease.

There are several other facts, however, which seem to militate against this hypothesis. There may be an explanation for them, and the hypothesis suggested by geographical distribution and the presence of filaria perstans in so many instances of sleeping sickness may be perfectly correct; nevertheless, I think it right to mention that filaria perstans occurs, apparently, all over the Congo valley, while sleeping sickness is confined to certain villages and districts; moreover, it tends to occur in outbreaks which from time to time assume epidemic characters. If filaria perstans be the cause of sleeping sickness, we should expect the distribution of the disease to be in closer conformity than it seems to be with the prevalence of the parasite.

Then in sleeping sickness the lymphatic glands, as I have mentioned, are frequently enlarged. It is difficult to see how this clinical fact is to be explained on the supposition that the parasite acts pathologically primarily on the encephalon.

The pruritus, which is so marked a symptom in the disease, may be the *expression of a neurosis; still, for this* clinical phenomenon also, such an explanation is not entirely satisfactory.

If filaria perstans be not the cause of sleeping sickness I cannot suggest any other cause. There are sufficient grounds, at any rate, for regarding it as a possible cause, and for following up the clue which its occurrence in this disease clearly affords.

CONCLUSION.

The working hypothesis suggested by the facts—analogical, clinical, and experimental—is to this effect: That the germ of sleeping sickness operates primarily on the encephalon; that this germ is possibly filaria perstans; that the parasite in its wanderings, either by entering the brain, or by interfering more or less directly with its nutrition, may gradually bring about a cessation of its function, ultimately leading to secondary neuro-muscular malnutrition and symptoms of sleeping sickness. If it can be shown that filaria perstans is the cause of sleeping sickness, the next step will be to ascertain the life-history of this parasite outside the human body; this once known, it will become easy to indicate an efficient prophylaxis.

TREATMENT.

Sleeping sickness, so far, has proved incurable. The natives in some places excise the enlarged cervical glands. When such an operation has been followed by apparent recovery, doubtless there has been a mistake in diagnosis. I heard of what appeared to be a case of incipient sleeping sickness which was cured by large doses of arsenic; in this case, also, diagnosis may have been at fault. In the early stages of the disease purgation and tonics, the clearing out of intestinal parasites, and similar subsidiary measures, do good temporarily. The younger of our patients certainly derived benefit from a liberal dosing with thymol; it rid him of a large number of round worms and ankylostomata. At present he is rather better than when he entered the hospital, but we may not expect ultimate recovery. Some time ago hypodermic injections of testicular fluid seemed to give encouraging results in certain cases on the Congo; later experience, however, has not been favourable to this remedy. At present our elder patient is taking a preparation of pituitary gland. The younger is on arsenic, which we propose to push. I am bound to say that though I hope for permanent benefit from these measures, I am very far from expecting it.—*British Medical Journal*, Dec. 3, 1898.

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CALCUTTA AGAIN OFFICIALLY DECLARED PLAGUE-INFECTED.

ON the 30th April last Calcutta was officially declared Plague-infected. Five months and ten days after, that is, on the 10th October, 1898, it was declared free from the disease. On the 24th of the current month, that is, exactly three and half months after the last date, Government has been compelled to announce that cases of plague have again made their appearance in the city. We subjoin the Government Resolution which has made the announcement. Conceived in the truest spirit of statesmanship, it breathes the broadest humanity in every line.

Our readers will remember that we had always pleaded for home segregation. The gist of our argument was that "the disallowance of such segregation would invite and lead to a danger of the gravest description. When people would see that if overtaken by the disease they would be dragged out of their homes, torn from those from whom alone they could have the best nursing, the best comforts, and the best consolations, and treated as outcastes of society, *they would try their best to conceal cases* and elude the vigilance of the keenest search parties unless these are armed with ruthless and arbitrary powers to override all the delicate and tender feelings of human nature. And who knows but that, if Government persists in disallowing home segregation, the zeal and indiscretion of search parties may not cause all the horrors and catastrophes of the Western Presidency to be repeated in the Presidency of Bengal? And moreover the concealment of cases would inevitably lead to the spread and aggravation of the disease, and thus frustrate the very object for which home-segregation is disallowed."

We thus wrote in January of last year before any cases of plague had occurred in Calcutta and before the city was declared plague-infected on the 30th April following. And we all know what the state of Calcutta was after that declaration, a state of lawlessness and terror which cannot be recalled to mind without a shudder. It is true that home-segregation, which was disallowed by Sir Alexander Mackenzie, was to a large extent very wisely allowed by the Government of Sir John Woodburn. But the fact that the home-segregation that was allowed was very partial, and that for the poor home-segregation was thought to be impossible, necessitating their being dragged away to isolation hospitals, or to segregation camps, caused a panic among the inhabitants, such as was unknown before, and the consequence was that nearly a third of the population of the city fled from it, not to escape from the dreaded disease which was said to have come at last, but from the "regulations" which were dreaded as worse than the plague itself.

It must, therefore, be gratifying to learn that Sir John Woodburn has recognized the force of sentiment and the claims of the poor equally with those of the well-to-do. "Foreign Governments," His Honor says, "would have just cause for complaint if the measures adopted locally were such as to lead to the *concealment of cases;* nor can the Local Government hope to cope successfully with an outbreak *if the regulations in force are so repugnant to the sense of the people* affected as to drive them to withhold information and *hide away their sick* instead of bringing them forward for treatment." His Honor goes on to say: "It is amongst the poor that the majority of the patients has usually been found: and any system is defective which leads these ignorant and superstitious people to resort to any shift rather than expose themselves to the chances of compulsory removal to a plague hospital or segregation camp." These words of sympathy for a class of people who constitute, we should not say the lowest stratum, but the very foundation of society, must be soothing balm to those for whom they are intended. The whole of the next paragraph (6) of the Resolution is devoted to laying down the humane principles by which the cases of the destitute are to be dealt with if they have the ill luck to be afflicted with the disease.

RESOLUTION.

No. 114Med.—*Calcutta, the 24th February* 1899.

By a Notification No. 6026 issued by the Municipal (Medical) Department of this Government on the 10th October 1898, it was announced that Calcutta was free from plague, no fresh case of, or death from, the disease having occurred since the 28th September. In a Resolution published on the same date, the Lieutenant-Governor drew attention to the danger of a possible re-appearance of plague, and expressed his desire that the ward, family, and caste hospitals which had been opened under private management should be maintained in working order, and that the precautions which had been taken to stave off an outbreak, and to deal with it if it should arise, should not be relaxed.

2. Since these announcements were made, dropping cases of a suspicious character have been reported from time to time, some of which were of such a character as to leave little room for doubt as to their having been genuine plague. Until recently, these have been so few in number, so isolated, and for the most part so far open to doubt that it has not been found necessary to re-impose the restrictions which were withdrawn in October; and the Lieutenant-Governor, while fully cognizant of their significance has thought it sufficient to report their occurrence from time to time to the Government of India, and to the various Foreign Governments, as required by the terms of the Venice Convention, still entertaining the hope that with the passing of the cold season they would disappear.

3. This hope has unhappily not been realised. During January 15 cases with 13 deaths were reported. During the present month, up to the 23rd instant, there have been 27 cases with 24 deaths, and the numbers reported during the latter part of the month are greater than in the beginning. In some wards of the town also, and notably in Ward No. V, the total registered mortality from all causes has lately risen in a marked manner above the normal rate, and though there is no direct evidence that this is due to plague, the absence of any other known cause is at least a ground for suspicion. Reports have also reached Government which point to the possibility that attempts may be made to conceal the occurrence of cases, the sufferers being turned out of their houses by the landlords or the other inmates, through fear of infection or for other reasons, and forced to seek shelter elsewhere. Intimation has been received that the authorities in

Egypt have decided to apply the plague rules against arrivals from Calcutta ; and orders have been issued by the Government of India that the regulations of the Venice Convention shall be enforced against Calcutta at the ports of Aden, Madras, and Rangoon.

4. In these circumstances the Lieutenant-Governor is compelled, with much regret, to re-impose the restrictions which were withdrawn in October 1898. A Resolution is under issue prescribing that the inspection of the passengers and crews of vessels leaving Calcutta for ports out of India shall again be conducted by day on shore at the time of embarkation, and the fact that this has been done will be endorsed on the bill of health to be granted before any such vessel leaves the port. Correspondence has recently passed regarding a proposal that the clothing of the crews and deck passengers of vessels proceeding on long voyages shall be disinfected before departure. The Lieutenant-Governor was at first in hopes that this measure might not be necessary, but in view of the altered condition of things this is no longer possible. In communication with the Liners' Conference and the late President of the Chamber of Commerce, he has drawn up a scheme to give effect to the proposal, and arrangements will be made to bring it into force as soon as the apparatus can be procured. Orders are also under issue to provide for the inspection of passengers by train in the same manner as was done prior to October 1898.

5. The Lieutenant-Governor has also had under consideration the question of revising the regulations for dealing with plague in Calcutta itself. Those now in force are contained in Plague Regulation No. 9, dated 10th November 1897, and were drawn up with reference to the experience which had been gained in Bombay and elsewhere, before any case of plague had occurred in Calcutta. In substance, the Lieutenant-Governor sees no reason to doubt their propriety and efficacy. In some points of detail, however, later experience has suggested improvements. In order that effective measures may be taken to prevent the spread of infection, it is of the first importance that every case which occurs shall be promptly brought to the notice of the authorities. Foreign Governments would have just cause for complaint if the measures adopted locally were such as to lead to the concealment of cases ; nor can the Local Government hope to cope successfully with an outbreak if the regulations in force are so repugnant to the sense of the people affected as to drive them to withhold information and hide away their sick instead of bringing them forward for treatment. Experience has shown that success has attended the system prescribed in Rule 46 of Plague Regulation No. 9, by which persons found to be suffering from plague are, at their discretion, permitted to resort to ward, caste, or family hospitals, maintained by private contributions, instead of being removed for segregation to the special plague hospitals at Maniktala, Marcus Square, and the Budge-Budge Road. Still more satisfactory has been the arrangement frequently resorted to by which persons are permitted to set apart portions of their dwelling or garden houses, under due restrictions, for use as private hospitals for themselves and their families.

In the case of the poorer classes, however, the arrangements have not worked so well. It is amongst the poor that the majority of the patients has usually been found : and any system is defective which leads these ignorant and superstitious people to resort to any shift rather than expose themselves to the chances of compulsory removal to a plague hospital or segregation camp.

6. The Lieutenant-Governor is therefore of opinion that measures must be taken to apply in the case of the poorer classes also the system which has so far worked well in respect of classes higher in the social scale. In future no person shall be removed to a public hospital under Rule 46 of Plague Regulation No. 9 without his consent, provided that suitable arrangements are made for the treatment of the case at home. If there is any ward, caste, or family hospital for admission to which he is willing to go, he may be moved thither. If there is no such hospital available, an endeavour should be made to explain to the patient or his friends the advantages which he would obtain in a public hospital in respect of treatment, attendance, and surroundings. But if, notwithstanding this, he still prefers to be treated at his own home, arrangements shall be made to adapt the latter for the purposes of a private isolation hospital. The other inmates, except such as are in attendance on the patient, should be induced to remove elsewhere. Medicines and medical attendance should be provided free of cost, and on the recovery of the patient (or after his death, if the case should terminate fatally) the premises should be either thoroughly disinfeced, or, if necessary, demolished, compensation being paid to the owner. All clothing or bedding which is likely to have become contaminated should also be at once disinfected in the Equifex disinfector or destroyed on payment of compensation. If any structural or internal alterations in the house or hut appear necessary in order to render it suitable for its purpose, these shall be carried out by the Chairman and the Health Officer at the public expense.

7. By these measures, the Lieutenant-Governor hopes to secure the active co-operation of the public in the reporting of cases promptly as they occur. There is at present no serious ground for alarm. Such cases as have occurred are undoubtedly sporadic. The season of greatest danger is nearly passed. Much has been done during the past two years to improve the conservancy of the town, and to introduce a higher standard of cleanliness. The municipal establishments have been strengthened, and a strong staff of competent medical and sanitary officers is at hand. The course which the disease has so far taken in Calcutta is such as to warrant the hope that the town may yet escape a serious outbreak. And the Lieutenant-Governor is confident that all classes of the community will unite with the authorities in their efforts to ward it off.

By order of the Lieutenant-Governor of Bengal,
E. N. Baker,
Offg. Secretary to the Govt. of Bengal.

HAHNEMANN'S MODE OF ADMINISTERING MEDICINE.

III.

We have seen that, as directed by Hahnemann, "every attenuation is prepared by six times triturating for six minutes and six times scraping for four minutes each time," each one requiring an hour. We have seen that no positive proof has been adduced to show that thirty-six minutes' trituration with sugar of milk reduces *all* substances to the same degree of attenuation, still less to show that three such successive triturations on the centesimal scale of thirty-six minutes each renders *all* medicinal substances equally soluble in water and alcohol, beyond the fact that dilutions prepared from the third centesimal trituration with equal parts of water and alcohol for the fourth and fifth, and with alcohol alone for the subsequent dilutions, are found to act as remedial agents up to at least the thirtieth, and to contain actual solid particles of the substances up to the twelfth dilution.

It is not possible from this fact alone to say at what stage the solubility of the "insoluble" commences. We know for certain, having prepared them ourselves, that liquid attenuations of Carbo vegetabilis, of Silicea, of Gold, prepared from the third decimal trituration, are every day giving us satisfaction up to the twelfth and higher. If these dilutions act not from any particles suspended in them, then they must contain the medicinal substances in a dissolved state; and if so, then the substances named must have attained their solubility at the one-thousandth attenuation which is considerably less than the millionth. This is a fact not to be overlooked in the consideration of this question. Having prepared the triturations almost immediately after our conversion to homœopathy, that is, upwards of thirty years ago, we do not exactly remember how many minutes we gave to each trituration. The probability is, we gave much more than thirty-six minutes, not less than an hour if we mistake not. This opens up the question, whether trituration with the same quantity of vehicle prolonged beyond the time prescribed by Hahnemann would not cause greater attenuation.

This question can only be satisfactorily answered by microscopical examination of the attenuations brought about by triturations of different durations, the minimum being Hahnemann's 36 minutes or an hour including the 24 minutes allowed for scraping. We believe that longer trituration will reduce the substance to finer particles. And repeated examinations of triturations of longer and longer duration will show where the ultimate limit of fineness with the same quantity of vehicle will be attained. We believe that trituration in the decimal scale will favor subdivision better, and in a lower scale better still. So that if we could have patience, the lowest scale, that of equal parts of substance and sugar of milk for the first attenuation, of equal parts of the first triturate and sugar of milk for the second; and so on, would decidedly be the best mode of triturating for the attenuations.

Hahnemann does not appear to have recognized the necessity of paying any attention to the time-element or duration of the triturating process as capable of affecting the degree of attenuation of substances subjected to it. Having fixed a certain duration probably after several trial experiments he was quite satisfied with it. But he was not so satisfied as regards the number of shakes or succussions (which as he rightly said were also forms of trituration) to be given to fluid medicines to bring them to required potencies. At first a number of shakes (not fixed) was prescribed, but with the increased hold of the dynamization theory on his mind he reduced them to two. "After many experiments and searching comparisons with the patients," he tells us, "I have for several years preferred from conviction to give to the medicinal fluids which are to be elevated to higher potencies and at the same time to be rendered milder, only two shakes (with two strokes of the arm) instead of the ten shakes given by others, because the potentizing in the latter case by the repeated shaking passes beyond the attenuation at every step (though this is one-hundred fold); while yet the end striven for is to develop the medicinal powers only in the degree that the attenuation may reach the end aimed at to moderate in some degree the strength of the medicine while its power of penetration is increased. The double shake also increases the quantity of the medicinal forces developed, like the ten-fold shake, but not in as high a degree as the latter, so that its strength may, nevertheless, be kept down by the one hundred-fold attenuation effected and we thus obtain ***a weaker*** though somewhat ***more highly potentized and more penetrating*** medicine." *(Chronic Diseases,* Vol. i, 1834.)

This is but a repetition of what he said in the note to § 270 of the *Organon :* "In order to maintain a fixed and measured standard for developing the power of liquid medicines, multiplied experience and careful observation have led me to adopt two succussions for each phial, in preference to the greater number formerly employed (by which the medicines were too highly potentized)." Here we have "the greater number formerly employed," and not "the ten shakes by others." We cannot understand how he could attribute the "ten shakes" to others, when both the ten and the greater number were prescribed by himself. For when later on he again substituted the ten for the two strokes, he said—"But during the last years, since I have been giving every dose of medicine in an incorruptible solution, divided over fifteen, twenty or thirty days, or more, no potentizing in an attenuating vial is found too strong, and I again use ten strokes in each. So I herewith take back what I wrote on this subject three years ago." *(Chronic Diseases,* Vol. iii, 1837.)

Writing later still, in December 1838, in the Preface to the fifth Volume of the *Chronic Diseases,* he becomes more liberal in the matter of succussions. He attributes the failure of one dilution and the success of another in particular cases not to the inappropriateness of the one and the appropriateness of the other, but to the imperfect preparation of the former and to the better preparation of the latter. "But no one in such cases," says he, "investigates the cause of the great difference of these effects. What prevents the preparer of the medicines (and this ought to be the homœopathic physician himself; he himself ought to forge and whet the arms with which to fight the diseases)—what prevents him, in preparing a potency, from giving 10, 20, 50, and more successive strokes against a somewhat hard, elastic body to every vial containing one drop of the lower potency with 99 drops of alcohol, so as to obtain stronger potencies? This would be vastly more effective than giving only a few nerveless successive strokes,* which will produce little more than dilutions, which ought not to be the case."

It will have been observed from the preceding that this wavering on the part of Hahnemann about the number of succussions to be used for the preparation of the potencies, did not proceed from any doubt as to the variation of that number causing variation in the attenuation or potency, but from the strong belief in the relationship of these variations as cause and effect. In the note to § 270 referred to above he gives a concrete example of what he believed to be the increase of potency by the increase in the number, or, which is the same thing, the duration of shakes. "I dissolved," says he, "a grain of soda in half an ounce of water mixed with alcohol in a phial, which was thereby filled two-thirds full, and shook this solution continuously for half an hour, and this fluid was in potency and energy equal to the thirtieth development of power." Here then we have the distinct expression of his belief that prolonged succussion of a substance dissolved in a certain fixed quantity of a liquid can and does render the particles finer than if the succussion were of less duration. Whether he was correct in his equation is a different matter altogether and does not affect our argument about his views regarding the effect of number or duration of shakes or succussion. We are certain that if Hahnemann had reflected on the subject he would have said the same thing about triturations that he did about succussions.

Hahnemann had so thoroughly worked himself into the belief in the power of trituration to develop the spirit-like powers of medicines, that in his latter days he directed even vegetable substances to be subjected to this process to raise them to the millionfold powder attenuation, as he called it, before making tinctures of them. He divided vegetable substances into three classes—1. Those, which though not juiceless, can only be procured dry, *e.g.*, cinchona bark, ipecacuanha, etc.; 2. those which are juiceless, such as oleander, thuja, bark of mezereum; and 3. those which yield abundance of juice on expression. Of the first he says that after the million fold trituration "they will dissolve with all their peculiar powers, in water and alcohol, and may then be preserved as medicines far more easily than the easily spoiled alcoholic tinctures." Of the second he says that a grain of the third trituration "dissolved in alcohol and water may be developed in the diluting vials with alcohol to the necessary degree of potency of their powers by giving for each potency two successive strokes." Of the third he says—" Also with the freshly expressed juices of the herbs it is best to at once put one drop of the same with as much sugar of milk as is taken for the preparation of the other medicines, so as to triturate it to the millionfold powder attenuation, and then a grain of this attenuation is dissolved in equal parts of water and alcohol, and must be potentized to a further dynamization through the twenty-seven dilution vials by means of two successive strokes. The fresh juices thus seem to acquire more of dynamization, as experience teaches me, than when the juice without any preparation by triturating is merely diluted in thirty vials of alcohol and potentized each time with two successive strokes."

This was not Hahnemann's teaching up to the publication of the fifth, the last, edition of the *Organon*, in 1833. In § 267 he says: "We gain possession of the powers of indigenous plants and of such as may be had in a fresh state in the most complete and certain manner by mixing their freshly expressed juice *immediately* with equal parts of spirits of wine of a strength sufficient to burn in a lamp. After this has stood a day and a night in a close stoppered bottle and deposited the fibrinous and albuminous matters, the clear superincumbent fluid is then to be decanted off for medicinal use. All fermentation of the vegetable juice will be at once checked by the spirits of wine mixed with it and rendered impossible for the future, and the *entire* medicinal power of the vegetable juice is thus retained (perfect and uninjured) *for ever* by keeping the preparation in well-corked bottles and excluded from the sun's light." He was so impressed with the importance of this mode of preparing vegetable substances for medicinal purposes that he rebuked Buchholz for not giving him the credit of the discovery. In a note to this section he directs a double proportion of alcohol to be added to the fresh juice of those plants which contain much thick mucus, as Symphytum officinale, Viola tricolor, &c., or an excess of albumen, as Aethusa cynapium, Solanum nigrum, &c. In the case of plants that are very deficient in juice, as Oleander, Buxus, Taxus, Ledum, Sabina, &c., he directs that they must first be pounded up alone into a moist, fine mass, and then stirred up with a double quantity of alcohol, in order that the juice may combine with it, and being thus extracted by the alcohol, may be pressed out.

It is not a little strange that he should have so soon, in the course of three or four years, so completely changed the opinion he formed here of these alcoholic tinctures. In 1833 he extols them as capable of retaining the *entire* power of the vegetable juice *for ever*, in 1837 he considers them as easily spoiled. It is true that in the same note later on, as regards the plants that are deficient in juice, he says, "these latter may *also when dried* be brought with milk-sugar to the million-fold trituration, and *then* be further diluted and potentized." It must be noted that the triturations of these plants after having been dried, are recommended as a possible, but not as the best way, of preparing the potencies from them. However, we may say, that here we have the germ as it were of the recommendation he made four years later to subject *all* vegetable substances to the triturating process for the first three attenuations or potencies. It is more than doubtful if the first trituration containing a decomposable organic substance, in the shape if a whole plant reduced to a paste or simply the juice, would keep for any length of time, and maintain the integrity of the medicinal substance. So that each time this attenuation might be required for administration, it would have to be prepared afresh.

It does not appear that Hahnemann gave any heed to this possible decomposition of the first trituration attenuation. Possibly having fixed the thirtieth as the standard potency, he did not think it necessary to preserve the first trituration after having prepared the others from it.

Now with regard to the triturating of all vegetable substances from the beginning, we have to remark that it should be had recourse to only in those cases where the paste of the whole plant or of parts of the plant, or the fresh juice un-alcoholized, has been used for proving; and that it should *not* be employed for preparing attentuations in cases where the tincture was used for proving. It strikes us as unaccountable that a keen observer like Hahnemann should not have seen the great difference there must be betwteen the two cases.

(To be Continued).

THERAPEUTICS AS A SCIENCE.

III.

WHY HAS THE PRINCIPLE OF CONTRARIES BEEN ADHERED TO, NOTWITHSTANDING ITS FAILURES?

We have seen that the signal failure of the law of contraries, though the only true and possible law of therapeutics, was due to the faulty application that was made of it; and that this faulty application was itself due to the imperfect knowledge of diseases and of drugs. This imperfection of knowledge was aggravated by hypothetical generalizations of the nature of diseases and drugs which were made at a very early stage of Therapeutics. It is more difficult to observe than to speculate, and it is no wonder that speculation should have taken the place of observation in a subject which is the most hidden from view. How is it, it may be asked, that notwithstanding its apparent and signal failure the principle has been clung to from the remotest antiquity down to the present time? It is because of the logical correctness of the principle supported by temporary cures, and because of so many easy, plausible ways of accounting for the failures.

OTHER PRINCIPLES EARLY RECOGNIZED.

It is not, however, a fact, that the principle of contraries has been acquiesced in universally as the only therapeutic law. As far back at least as the time of Hippocrates, other principles were recognized as guides in therapeutics. The principle of similars was certainly so recognised, and cures were also ascribed to drugs between whose action and diseases there could be discovered neither contrariety nor similitude. The history of medicine shows that men arose in the profession who recognized the principle of similars as a therapeutic rule in addition to that of contraries.

THE PRINCIPLE OF SIMILARS IN ITS ISOPATHIC ASPECTS.

It must be said to the credit of the profession that there were in it in all ages men who condemned speculation and insisted on observation and even actual experiments for the discovery of remedial agents. Dr. Dudgeon has given a goodly list of these men, with short accounts of what they did, in his admirable *Lectures on Homœopathy.* "Thus," says he, "we find Erasistratos of Julis (304 B. C.) giving some account of the action of poisons, not very satisfactory it must be confessed, but still showing the importance he attached to such experiments. Heraclides of Tarentum (who flourished about the 2nd or 3rd century B. C. and whom Galen quotes with approval) wrote a treatise upon the effects of the poisonous animals. Mithridates king of Pontus (164-24 B. C.) tried animal and vegetable poisons on himself and on animals, for the purpose of ascertaining their effects, and another royal dilettante, Attalos Philometer king of Pergamos, experimented with digitalis, hyoscyamus, veratrum, hemlock, etc. Nicander of Kolophon (175-135 B. C.), a poet as well as a physican, has recorded the physiological action of a great array of animal and vegetable substances. * * Nicander also recognizes the homœopathic, or, perhaps more correctly speaking, the isopathic principle; for he recommends for the dangerous effects of viper-bites, the liver or head of the reptile macerated in wine or river-water, and for poisoning by the toad called *rana nubeta*, the cooked flesh of frogs." Xenocrates of Aphrodisias, who flourished more than a hundred years before Galen, is next mentioned as having recommended goat's blood for hæmoptysis, pulverized fox's lungs for asthma, the saliva of the rabid dog for hydrophobia, &c.

After mentioning a few other names, Dr. Dudgeon says: "The examples just quoted from the empirical authors are certainly more within the domain of isopathy than of homœopathy, still they suffice to show the existence of a sort of instinctive notion that the remedy must act in the same sense as the morbific agent; and as the line of demarcation betwixt homœopathy and isopathy is not very well marked, we may take them as a rough and rude expression of the principle *similia similibus*." And they also show that the principle of contraries was not looked upon as the only the guide-law of therapeutics.

GRADUAL EVOLUTION OF THE PRINCIPLE OF SIMILARS.

The principle of similars was recognized in a more correct aspect than isopathic. The *idem* (same) passed into the *simillimum* (most similar). Even Galen himself has been shown to admit it in other departments than therapeutics, and Fallopius, one of his commentators, has understood one of his passages to mean "that the quality (temperamentum) of the medicine must correspond in similarity to the quality of the disease and also of its product, though they must not be identical."

Dr. Dudgeon next cites the following remarkable words from *De Microcosmo* of Basil Valentine, the assumed name of a Benedictine monk, who lived about the year 1410, in the convent of St. Peter at Erfurt, as distinctly enunciating the principle of similars: "Likes must be cured by their likes, and not by their contraries, as heat by heat, cold by cold, shooting by shooting; for one heat attracts the other to itself, one cold the other, as the magnet does the iron. Hence prickly simples can remove diseases whose characteristic is prickly pains; and poisonous minerals can cure and destroy symptoms of poisoning when they are brought to bear upon them. And although sometimes a chill may be removed and suppressed still I say, as a philosopher and one experienced in nature's ways, that the similar must be fitted with its similar, whereby it will be removed radically and thoroughly, if I am a proper physician and understand medicine. He who does not attend to this is no true physician, and cannot boast of his knowledge of medicine, because he is unable to distinguish betwixt cold and warm, betwixt dry and humid, for knowledge and experience, together with a fundamental observation of nature, constitute the perfect physician."

Of all the physicians before Hahnemann who recognized the principle of similars in the treatment of disease the most celebrated was Phillipus Aureolus Theophrastus Bombastus von Hohenheim, better known by the name of Paracelus. Overlooking the disreputable life he lived, we cannot but look upon him as one of the greatest reformers in medicine, second only to the founder of Homœopathy. The resemblance between him and Hahnemann in the most important points was striking. He saw through the absurdities of the prevalent methods of treatment as clearly as Hahnemann did. He had as much contempt, for the apothecaries as Hahnemann had. He was as uncompromising a denouncer of theorizing as Hahnemann was. He was impressed with the falsity of the principle of contraries as much as Hahnemann himself. Other points of resemblance between him and Hahnemann are furnished by his aversion to polypharmacy, by his partiality for extremly minute doses, by his employment of medicines by olfaction, by his recognition of the primary and secondary actions of medicines, by his looking upon the powers of medicines as something spiritual separable from their matter. Such contempt had he of the great authorities and masters of healing art, so great was his conceit of his own superior wisdom that, when appointed Professor of Physic and Surgery in the University of Basle in 1526, he "commenced his career of academic teaching by committing publicly to the flames the works of Galen and Rhazes, exclaiming that they did not know so much as *his* shoe latchets." Hahnemann, it is true, did not burn any books as worthless, but his conceit of his own superior knowledge and wisdom, though not couched in as violent language or expressed in as unseemly and indecent acts as Paracelsus's, was scarcely less.

Dr. Dudgeon, after establishing the points of similarity between Paracelesus and Hahnemann by quoting passages from the writings of the former, remarks: "I have said enough to show you the great analogy, the very striking resemblance betwixt Hahnemann's and Paracelsus's doctrines. I could not quote to you all the passages that are strikingly analogous to many in Hahnemann's works, but what I have adduced will enable you to judge of this great likeness for yourselves. It is impossible at this moment to say if Hahnemann was acquainted with Paracelsus's writings. From his extensive familiarity with the writings of medical authors, both ancient and modern, I should hardly suppose that he had not read the works of one so world-renowned as Paracelsus; but then not a syllable occurs in all his works regarding this wonderful and most original writer and thinker. The resemblance of some passages in the Organon, and in the minor writings of Hahnemann, to some parts of Paracelsus's works is so very striking, that it is difficult to believe that Hahnemann did not take them from Paracelsus; and yet had he done so, would he not have acknowledged the fact? It may be, after all, that that resemblance is purely accidental, and that the ideas that seem borrowed are just those that must necessarily occur to one who, like Paracelsus, had shaken himself free from the trammels of an antiquated and false system, and had set himself to study nature with his own eyes, unblinded by the distorting spectacles of the schools." Or, was it because of the disreputable life of Paracelsus inconsistent with that of a true physician that Hahnemann did not deign to acknowledge his indebtedness to him? But this again would be a mystery which should remain unsolved.

(To be Continued.)

REVIEW.

British, Colonial and Continental Homœopathic Medical Directory 1899. Edited by a Member of the British Homœopathic Society and Dr. Allexander Villers, Corresponding Member of the British Homœopathic Society. Homœopathic Publishing Company. London. 1899.

THIS is the fifth year of issue of this Directory, and is an improvement upon its predecessors. The continental portion, we learn from the Preface, has again had the advantage of revision by Dr. Villers (for Germany and Austria), Drs. Batault (Switzerland), Joseph Bonino (Italy), Léon Brasol (St. Petersburg, Russia), Cartier (France), Hansen (Denmark), S. Van den Berghe (Belgium), and Mr. H. C. Voorhave (Holland). For the Colonial portion the Editors had valuable aid from Dr. A. R. Griffiths, Montreal; D. L. Thompson, Esq., Toronto; and E. G. Owen, Esq., Melbourne.

We may, therefore, assume that so far as the countries, from which the Editors have received information direct, are concerned, that information must be correct. But as regards other countries, such as the West Indies, Cape Colony, India, &c., from which the Editors do not seem to have received any information from any appointed agents, we may assume that the information given may not be quite correct. We are led reluctantly to make this remark from the information given under INDIA. We have here names given of persons who are no longer in the land of the living; two of whom, B. L. Bhaduri and Jagadis Chandra Lahiri died long ago, and one of whom died in May of last year, and whose death was recorded in the *Calcutta Journal of Medicine* for June of that year. Again, we find a couple of names given of unqualified practitioners, whereas a host of names of qualified practitioners is omitted.

There is no longer any question of the need and importance of a Homœopathic Directory, but such a directory to be really useful must be accurate. We are not unaware of the difficulties of procuring information from distant countries, but they are not insuperable and must be overcome or the countries from which such information cannot be had must be omitted from the Directory. We see there is still opposition to the publication of the present directory, and that there are some of our colleagues in England who are still refusing to allow their names to appear in it. We must confess we are unable to understand the reason of this. We are certain that it cannot be the fear of incurring the odium of having one's name in a homœopathic directory. There were homœopathic directories before the present one was launched into existence, and which used to be edited by some of those who now seem to be the leaders of the opposition.

EDITOR'S NOTES.

The Therapeutic Uses of Suprarenal Gland.

Fr. Robin (*Thèse de Paris,* 1898) records a case presenting all the symptoms of Addison's disease together with tuberculosis lesions in which, under the influence of suprarenal medication, all the symptoms, including the bronzing of the skin, disappeared and the patient recovered his strength. The cure has been maintained three years. Fresh glands were given, and a hydro-glycerinated extract of suprarenal juice was administered by hypodermic injection.—*Brit. Med. Jour.,* Jan. 7, 1899.

A Bullet Embedded in the Heart for Thirty-seven Years.

Dr. O. B. Beer, writing recently in the *Cincinnati Lancet Clinic,* says that not long ago Dr. G. O. Brown and he held a necropsy on an old soldier who had been wounded by "bushwhackers" during 1861. The wound was made by a small rifle ball of the kind used in muzzle-loading rifles. It had entered the thorax posteriorly on the left side between the second and third ribs, and had passed downward and inward through the left lung and pericardium, and had embedded itself in the wall of the heart near the lower part of the left ventricle. There had never been any disturbance of the heart's action and the organ seemed to be perfectly normal. The man had, after recovering from the effects of his wound, served till the close of the war and since had been a farm labourer. Cancer of the arm was the cause of his death.—*Brit. Med. Jour.,* Jan. 7, 1899.

The Distribution of the Medical Profession in Great Britain and Ireland.

The whole number of practitioners for 1899 is 34,994—an increase over the figures for 1898 of 91, a very decided drop from the increase for 1898 over 1897, when the figures were 619. The practitioners included are distributed as follows, the numbers for 1898 being given in brackets:—Number of practitioners in the London list, 6117 [6081]; in provincial England, 15,497 [15,400]; in Wales and Monmouth, 1100 [1081]; in Scotland, 3394 [3412]; in Ireland, 2551 [2615]; resident abroad, 3795 [3770]. Naval, military, and Indian medical services, excluding those who appear also in other lists, 2528 [2521]; too late list, 12 [23]. The deaths numbered 532, as against 599 in 1898, though of course this number is under the real amount for the year.—*Lancet,* Jan. 7, 1899.

A New Proteid in Milk.

To the three proteids already known to exist in milk—albumin, globulin, and casein—a fourth must now be added which has been named by its discoverer, A. Wróblewski, "opalisin" from the opalescent appearance of its solutions. M. Wróblewski has given a description of it in Hoppe-Seyler's *Zeitschrift für Chemie.* It exists in largest quantity in human milk; a similar if not identical substance is less abundant in the milk of the mare; and there is yet another which, however, only exists in very small quantities, in the milk of the cow. Its percentage composition is:—C, 45·01; H, 7·31; N. 15·07; P, 0·80; S, 4·70; and O, 27·11. This new proteid does not reduce Fehling's solution after boiling with hydrochloric acid and it yields no pseudonuclein when digested with pepsin. For the solution of one gramme 121·3 c.cm. of a solution of soda containing 1 part of the alkali to 100 parts of water are required. It responds to the biuret, Millon, and xanthoproteic tests and also to that of Adamkiewicz. It was obtained by the addition of sodium chloride to the fluid remaining after the precipitation of the casein in human milk by hydrochloric acid.—*Lancet*, Jan. 28, 1899.

The Roentgen Rays in the Diagnosis of Nephrolithiasis.

Ringel (*Centralbl. f. Chir.*, No. 49, 1898) has been led both by laboratory research and by observations on the living subject to the conclusion that the uncertain results attending the use of the Roentgen rays in cases of supposed renal calculus are due to the fact that the transmission of the rays is influenced by the chemical composition of the calculous deposit. Whilst an oxalate calculus forms a well-defined picture, a urate calculus presents but an indistinct outline, and a phosphatic calculus, which like a gall stone transmits the rays, is almost if not quite invisible. The renal calculi which might be discovered by the use of the rays are those least frequently met with. The absence of a shadow, therefore, is no proof that a renal calculus is absent, and this rule will apply even to cases of oxalate calculi, as the outlines of such deposits may be obscured by pus or turbid urine. The application of the Roentgen rays is still more unsatisfactory in cases of vesical calculus, as the author has succeeded only twice in making out by skiagraphy the presence of a stone in the bladder, whilst in several cases of very large stone removed by operation on the living subject or after death no traces were afforded by this method of investigation.—*Brit. Med. Jour.*, Jan. 7, 1899.

The Therapeutical Value of Fasting.

Domenicis (*Wein. med. Presse*, No. 18, 1898) has completed a series of experiments on animals and human beings with regard to the value of fasting in treating acute infectious diseases. He is of opinion that within reasonable limits a diminution in the food supply helps the organism to withstand the attacks of microbes better than the opposite system of overfeeding. The author has also included some chronic diseases in his experiments. In pneumonia the careful study of 140 cases showed that the action of bacteria was favoured by alterations in the quality of blood and in pecularities of all cell protoplasm. Diseases of alimentary canal proved to be the chief factor in giving rise to these blood changes. The virulence of the poison and also the anatomical lesions in the lung bore a definite proportion to the amount of disease in the intestinal tract. According to the author, improper feeding is a very frequent cause of death in pneumonia, and one which is apt to be overlooked. The chief points, then, in the treatment of pneumonia would be (1) to diminish the quantity of food. (2) to administer antiseptics by the mouth. Renzi follows a similar method of treatment in arthritis.—*Brit. Med. Jour.*, Jan. 21, 1899.

Appendicitis or Epityphlitis?

Küster (*Centralbl. f. Chir.*, No. 50, 1898) protests against the use of the term "appendicitis," which he regards as most unsatisfactory both in meaning and in form. German anatomists do not use the term "appendix" in describing the vermiform process of the cæcum, and are unwilling to adopt a term which in its multiple sense is already generally applied to the small fatty processes met with on the large intestine. The form of the term "appendicitis" is held to be particularly objectionable, as it consists of a Latin word with a Greek ending. Such a term, Küster holds, would be hardly tolerable even if it could not be replaced by another. It is not difficult, however, he states, to find a good substitute. The Greek anatomists, whose definitions were made chiefly on animals which with some few exceptions do not possess a vermiform process, left no term for this structure, but it would have been in accordance with the spirit of the Greek language to have given to it the name of "epityphlon" as indicating a something attached to the outer surface of the cæcum. On these grounds Küster would advocate the substitution of the term "epityphlitis" for that of appendicitis. The former term, which he has long used in his clinical lectures, will, he anticipates, be preferred by those acquainted with Greek to the older and more frequently used term.—*Brit. Med. Jour.*, Jan. 28, 1899.

A Needle in the Heart.

F. J. Shepherd (*Canadian Practitioner*, December, 1898) records the following case: A man, aged about 40, suffering from suicidal mania, got possession of a file and two darning needles, each 2½ inches long. The needles he thrust, as he thought, into his heart, and then drove them home with the end of the file so that they disappeared beneath the skin. Shepherd was sent for in the middle of the night and found the man writhing in agony on the floor. On examination he saw two punctures in the region of the apex between the fifth and sixth ribs, and an elevation of the skin took place near the one over the apex at every heart beat. Shepherd could distinctly make out with his finger the head of the two needles, the outer one deeply in and not affected by the heart beats, the inner one apparently firmly fixed into the heart muscle near the apex of the organ, and pushing up the skin at every beat. He immediately cut down on the needles, having to go through the intercostal muscles before reaching them; he then extracted them with a small needle holder. The one fixed in the heart came away with difficulty; the other, which was in the lung was easily removed. The patient experienced immediate relief; the wounds healed by primary union, and in a couple of days the man was as well as ever. The needle first introduced missed the heart, and the second was firmly imbedded in the left ventricle, but had not penetrated.—*Brit. Med. Jour.*, Jan. 28, 1899.

Extrauterine Pregnancy.

Mordecai Price (*University Med. Magazine of Pa.*, July, 1898) states that, in every case of extrauterine pregnancy where the fœtus lives after the rupture, it is owing to its being protected by an unruptured amniotic sac, since the peritoneum would digest a fœtus at any age unless protected from its influence, and the amnion can be demonstrated in every case which has passed the second month. The primary rupture in 99 per cent of all cases, even in those which go to term, is into the peritoneal cavity, and not, as Tait maintains, into the cavity of the broad ligament. This statement rests on the examination of over 200 cases. Price believes that the most dangerous variety—the interestitial—should be recognised and operated on before rupture takes place. In fact, in any form of tubal pregnancy, the operation should be performed as soon as the diagnosis is made. In the early months the operation is simple and the results excellent, but as pregnancy advances, the dangers increase until the period of viability is reached. Since only 8 or 9 recoveries of both mother and child have been recorded, no woman should be allowed to run such risks for so small a chance of a living child. Before the sixth month the placenta is generally easily removed, but from the seventh month on with a living child its removal is generally impossible. In such a case the placenta must be cleaned, the cord cut, and the abdomen closed, or the abdomen can be left open and the placental surface packed with gauze until the placenta comes away. The latter plan was used in the author's case, where both mother and child were saved in the tenth month of pregnancy.—*Brit. Med. Jour.*, Jan. 21, 1899.

Mental Conception upon a Part as a Factor in the Formation of a New Growth.

It has long been a popular idea that too much thinking about any particular part or organ may lead to disease of that portion of the body, but it must be confessed that very little substantial basis of fact has served as foundation for this superstructure. Dr. Carpenter was, we believe, the first to point out and to demonstrate by experiment that concentrating the mind on a special part of the body will lead to a local hyperæmia with sensations of tingling and itching, but, so far as we are aware, no true inflammation was ever produced. It is not difficult to understand that the directing of the mind towards some particular part of the organism may alter the blood-supply of that part and so may modify materially its nutrition. If this be possible—and who can say it is not?—it is not at all unlikely that morbid changes may result from, or be predisposed to by, these slight beginnings. It is very difficult, however, to find many cases which can only be explained satisfactorily by some such theory. Mr. W. H. Bennett, in a clinical lecture recently delivered at St. George's Hospital and published in this issue of the Lancet, quotes two cases which if not convincing are at least very suggestive. In each of them increased growth of a tumor appeared to follow the continued concentration of the patient's attention on the part. It has occasionally happened that a physician or a surgeon who has paid particular attention to the diseases of some one organ or region of the body ultimately suffers from an affection of the same part. These cases, though striking, are but few in number and no more numerous than would be expected from the laws of probability. If there were any certain foundation for such an idea medical men might be found to hesitate before "specialising" on the more painful and unpleasant diseases to which the body is liable.—*Lancet*, Jan. 7, 1899.

A New Method of Enumerating the Sudoriparous Glands.

A new way of counting the sudoriferous glands in the human subject has been devised by Dr. Eijkmann, of the Dutch Colonial Service, who is stationed in Java. Our description is abbreviated from that of Dr. H. Gros in a recent number of the *Archives de Médecine Navale.* The spot selected for examination having been sedulously washed with soap and water and still further cleansed by means of alcohol and ether, an alcoholic solution of fuchsine is poured over it and allowed to dry, the drying process being accelerated by fanning. A sheet of fine white paper is then closely applied and maintained in apposition by an evenly adjusted flannel bandage, great care being taken to avoid creases and folds. On removal after a few minutes the paper will be found thickly studded with red stains, each stain representing the aperture of a sudoriferous gland. The fuchsine has no effect on the parts that keep dry, but wherever the paper has been moistened by a drop of perspiration there will be a mark. A whole series of "proofs" can be "pulled" in this way without any need to renew the fuchsine. In determining the number of glands the system adopted for counting the red corpuscles of the blood may be employed. Dr. Eijkmann has examined the skin of the palm of the hand, the forehead, the sole of the foot, the forearm, the arm, the thigh, the back, the leg, and the anterior surface of the thorax in two Malays and three Europeans. On an average of the whole body he found 160 sweat glands per square centimetre of skin in the former and 162 in the latter; but the distribution varied greatly according to situation, the palm of the hand and the brow being the parts which are most thickly studded. As far as the sudoriparous system is concerned there would therefore seem to be little or no difference between Caucasians and their more dusky brethren, but number of subjects experimented upon is too small to admit of generalisation and, moreover, sweat glands vary greatly not only in size but also as to their secretory capacity.—*Lancet*, Jan. 14, 1899.

The Bacteriology of Rum.

It might be thought impossible on the face of it that there could be any bacteriology of rum seeing that it contains nearly 75 per cent. of alcohol, but according to the results of a very interesting investigation recently made by Mr. V. H. Veley, M.A., F.R.S., of Oxford University, and his wife there does exist an organism in rum which accounts for an apparent disease to which it is liable at times and which is known in the trade as "faultiness." The cause of this disease has long been unexplained, for it has never occurred to those concerned that it could be due to a microbe, especially as the strength of the spirit is only 25 per cent. short of pure alcohol. The "faultiness" of rum is at once obvious when the spirit is diluted with an equal bulk of water, the diluted liquid either immediately or after some hours becoming cloudy and depositing on longer standing a more or less copious precipitate or showing the presence in greater or less abundance of floating flocculencies. The micrococcus which has been isolated and identified as the cause of "faultiness" is a very interesting organism. It does not, however, appear to be pathogenic or toxic according to the results of inoculating a guinea-pig. Its survival in spirit—that is, in a liquid which has hitherto been considered to be one of the best materials for preserving anatomical specimens—is remarkable. Strictly speaking, however, the organism does not flourish in alcohol but "in its gelatinous envelope, thus living as it were in a state of siege in its own castle through the walls of which it can obtain its necessary supplies of food in the form of sugar while keeping out its enemy alcohol." No definite information has been obtained as to the original habitat of this peculiar micro-organism. The discoverers of this new micro-organism which has caused a great pecuniary loss to manufacturers propose to call it provisionally *Coleothrix methystes*, from *koless* (a sheath) and methutes (a drunkard)—a name ingeniously suggested by a Fellow of Corpus Christi College.—*Lancet*, Jan. 21, 1899.

Are Homœopathic Physicians Justified in Using Antitoxin?

Serum therapy has recently presented such claims to the medical profession, and its therapeutic value in certain diseases has been demonstrated so conclusively, that we as conscientious physicians naturally have given thought to the question of our position as *homœopathic* physicians. Shall we refuse to use this new therapeutic agent until we have demonstrated its action to be in accordance with the principles of Homœopathy, or are we justified in adopting it in cases where it has been proven to give better results than our own well tried methods?

It would seem that the decision of this depends upon our understanding of the requirements of a so-called "homœopathic physician."

In the first place, this term "homœopathic physician" was not of our own making, was applied to us in contempt by the old school, and we believe has been and is still of inestimable value to us by enabling the laity to differentiate us from our allopathic neighbours.

But although the progenitor of our school of medicine taught that the principles of homœopathy were of paramount importance in prescribing, he also delared that our first duty as physicians is "to heal the sick." The science and art of medicine and surgery have taken many steps forward since Hahnemann's day; and while the principle of homœopathy still stands foremost as a therapeutic principle, there are other things of value in medicine and surgery besides the homœopathically selected remedy, things that we as progressive physicians can not ignore.

In looking back to our own Commencement Day, when we received at the hands of the revered Prof. A. R. Thomas our right and privilege to practice the healing art, we well remember that there was conferred upon us first the degree of Doctor of Medicine, and in *in addition* thereto the degree of Doctor of *Homœopathic Medicine.*

It was our belief then and is to-day, that our Alma Mater taught us all of medicine in general that would be of value to us as physicians, and in addition taught us what we could not obtain at an allopathic school—a knowledge of homœopathy as a principle of therapeutics. We were then, and students of homœopathic colleges are to-day graduated as physicians in the broadest sense.

But because we possess against disease a weapon unknown to our allopathic friends, may we not properly avail ourselves of *all* that is good in medicine? It is seldom that the homœopathic principle of selection fails us, and then may be because of our own ignorance; but when in a given case something better in its results is demonstrated, are we stultifying ourselves by using it?

We think not. We have little respect for the physician who "practices either school" according to the proclivities of his patient, but we have as little patience with the "homœopathic physician" who can see no good in any thing but the "similimum." Our laurels as a school have been and will still be won through carefully made homœopathic prescriptions; but in our opinion we are none the less homœopathic physicians because we make use of whatever appeals to our good judgment as being the best for our patient's welfare. —*American Medical Monthly*, Dec. 1898.

Death by Electric Shock, Coal-Gas Poisoning, and a Dangerous Practice in Connexion with Public Sewers.

Public service supplies are not without their dangers, be the supply water, electricity, or gas. All three have been known to be concerned in bringing an explosion about under the pavements of our streets. Thus leakage from the water-mains may destroy the insulation of electric cables and sparking may result which would ignite any coal-gas which may be escaping from the gas-mains. Sewers also may contain an explosive mixture which should it be ignited by any means would probably rupture the pipe besides being a source of danger to those who examined the working of the sewerage systems from time to time. Only recently three noteworthy occurrences were reported in connexion with gas, electricty, and sewer services which are worth recording although they do not relate to the combination of circumstances to which we have just referred. The first case is that of the death of a man from electric shock at Southampton during the laying of a cable. It appears that a leakage was suspected in a low-tension cable which was lying side by side with a high-tension cable. On proceeding to make an examination, the discharge of sparks having been previously noticed, the poor fellow by some means, though a skilled artisan and well aware of the danger of touching a bare high-tension cable, undoubtedly received a shock which proved fatal. Apparently the deceased had ignored the warning to wear gloves. From the evidence at the inquest it appeared that shutting off the current would have put the town to great inconvenience and it was stated that by exercising great care even high-tension cables could be repaired when "alive." The repairing of low-tension cables was not attended with anything like the same risk. The jury returned a verdict of "Accidental death." Considering the poisonous nature of coal-gas, which is due in a great measure to the carbon monoxide which it contains as well as to certain obscure aromatic bodies, it is remarkable that a greater number of cases of poisoning from this cause are not recorded. At a certain dwelling-house in Woolwich last week it was observed one morning that the blinds remained down and that there were other signs of stillness in the house which implied that something was wrong. On gaining access to the house from the back the police found the rooms pervaded with coal-gas. On reaching the bedrooms the smell of gas was almost overpowering and one person was found dead in bed and two nearly so. There is hope, however, that these two may recover. At the inquest on Jan. 9th on the body of the deceased person it was stated that there was a defect in an old form of chandelier in the room beneath the bedroom. We believe that this old form of extending gas-bracket has been responsible for many a disaster. In this form of chandelier there is a water seal and when the water evaporates the dipping pipe may be above the surface of the water, the arrangement thus failing as a seal, the gas escaping freely into the apartment. This is a dangerous appliance and should be done away with, especially as modern appliances are now made with special adjustments for extending their length which require no clumsy contrivance for sealing the gas by water. The last case in connexion with the dangers of public services is that in which a firm of chemical manufacturers was summoned at the instance of the West Ham Corporation for discharging dangerous chemical refuse into a sewer. Evidence was given that to this fact a serious explosion could be attributed, the effects of which in the sewers could be seen for nearly half a mile along the line of the sewer, six or seven manholes being blown off, the contents of the sewers at the same time catching fire. A sample of the sewage taken close by the defendants' works ignited readily when a light was applied, the stuff burning for nearly three minutes and throwing up a flame some 18 in. high. The inflammable character of the discharge was probably due to fiery compounds of the nature of benzine. It is quite evident that this unwarrantable procedure might not only be very dangerous but a source also of creating serious defects in a sewer which might have appalling results on the health of a locality. The magistrate was satisfied that the West Ham Corporation had made out their case and the defendents were fined heavily.—*Lancet*, Jan. 14, 1899.

CLINICAL RECORD.

Indian.

A Case of Dysentery with high Fever.

By Dr. Amrita Lal Sircar, F.C.S.

C——, a Hindu lad, aged 3 years, was placed under my treatment for dysentery and fever, on the 25th of October 1898.

The child had been suffering for more than two months before he came under my care and was being treated by Kavirajes and old school practitioners. I found the patient greatly prostrated, the temperature being very high ranging between 100° and 105°F. and the number of stools about ten or twelve in twenty-four hours. The stools were bloody, mucous mixed with blood and sometimes greenish mixed with blood. I gave *Ipec.* 6. The father of the patient reported on the 28th, that the fever was less but the stools were the same in number and character. I then prescribed *Merc. s.* 6. Two doses were given—one in the morning and one in the evening. This produced no very marked effect. The child was kept without any medicine for two days. On the 31st October *Merc. s.* 6. was repeated. This time only one dose was exhibited. The stools diminished in number only by one or two, but no other improvement was noticed. As the temperature was high I did not venture to give rice which I had a great mind to do, for barley water and arrowroot are almost of no use in cases of dysentery. On the 1st of November *Placebo* was given. The father came to me on the 2nd and reported that the child strained a great deal during, and that there was intense cutting pain after, each stool. The pain was much less when the child remained on his side bending double, or when the abdomen was pressed gently by the hand. This guided me to select *Podophyllum.* I gave a dose of the 6th dilution in the morning and told him to report in the evening. The child was remarkably better in the evening and another dose was given. Next day the report came that there was no pain at all, the number of stools had diminished to four or five, and the character of the stools had changed —there being more of fœcal matter than of blood and mucous. Another dose of *Podo.* 6 was given in the evening. Report was received on the 4th that the child was doing well. The fever had altogether left him and the stools were semi-consistent. The same medicine was continued. I now gave for diet well-boiled rice, with gandhal and fish soup. The father of the child came to me on the 7th and reported that the child was doing well in every respect save that he passed a small quantity of blood immediately after each stool. The stools were this time two in number in twenty-four hours. I gave *Calad. seg.* 3x, two doses a day. Within two days the child was all right, and has continued so since; the blood after stool ceased, and there has been no return of the dysentery. This case well illustrates the action both of Podophyllum and of Caladium.

Foreign.

A Case of Moveable Third Kidney.

By W. Watson Cheyne, F.R.C.S. Eng., F.R.S.

In the following case an independent third kidney was found on abdominal section and the extreme rarity of such a condition induces me to place it on record. Here a well-developed kidney was found on the right side of the lower part of the spinal column just at the brim of the pelvis, having its own ureter and blood-supply, and distant about from 3 to 4 in. from the right kidney, which was felt in the right loin and apparently of normal size. The hand passed up into the left loin also grasped the left kidney which was somewhat smaller than the right. In this case the symptoms were no doubt due to the mobility of the kidney and probably to slight pressure on, or kinking of, the ureter.

As regards anatomical literature I have consulted Professor Hughes and find that very little has been said about supernumerary kidneys. In the tenth edition of Quain's Anatomy, having referred to the common malformation—viz., horseshoe kidney—and to the absence of one kidney, the writer says: "The occurrence of an additional kidney is extremely rare; the supernumerary kidney is placed either in front or on one side of the vertebral column or in the pelvic cavity." In most standard works there are only statements to a similar effect. Debierre ("Traité d'Anatomie") relates a case recorded by Gavard where three kidneys were situated against the lumbar spine, the ureter of the central kidney opening into the ureter of the right kidney. This he regards as a case of complete division of the right kidney. There are also cases recorded by Adami, Day, and Halasy of complete double ureter attached to one kidney and several cases of single (lateral) kidney by Birmingham, Dwight, Menzies, Macky and Koch, and Tweedy. The following are the facts of the case which came under my observation.

A woman, aged twenty-two years, had been under the care of Mr. Coalbank of Teddington for some time suffering from indefinite abdominal pain, indigestion, and a general hysterical condition. The only special feature in the symptoms was that when the pain was severe there was diminution in the quantity of urine passed. On examining the abdomen Mr. Coalbank detected a swelling below the umbilicus which was tender and corresponded to the chief seat of the pain. Early in January, 1898, I saw the patient with him and examined her under chloroform. An irregular, flattened, tender swelling was readily felt behind the right rectus muscle at the brim of the pelvis. The swelling was somewhat but by no means freely moveable and had a nodular character. It could not be felt from the pelvis and evidently had no connexion with the pelvic organs. As to the exact nature of the swelling we could not arrive at a definite opinion. The idea of a moveable kidney which presented itself among other suggestions was discarded on account of the situation of the tumour and the fact that it could not be pushed into the loin. As, however, it was evidently the chief source of the patient's trouble it seemed desirable to explore and ascertain the exact nature of the swelling and see whether anything remediable could be done. This I did on Jan. 18th, 1898. On opening the abdomen in the middle line it was found that the tumour was situated behind the peritoneum resting on the right side of the lower lumbar vertebræ and the brim of the pelvis. The peritoneum having been divided over the swelling and some fat around it having been cleared away it was exposed and presented the appearance of normal kidney substance. It was now thoroughly protruded through the opening in the peritoneum and presented the shape and size of a normal kidney except that it was distinctly lobulated. The hand was then passed up into each loin and a kidney found normally situated on each side, as has been already stated (this fact was verified a second time before the abdomen was closed). The condition was thus clearly one of supernumerary kidney and the patient's trouble was essentially due to slight mobility of this organ. I made no attempt to fix the kidney by stitches as that would have been very difficult and I hoped that the tearing and disturbance necessary to expose it would lead to such adhesions as would sufficiently fix it in its place. The kidney was therefore returned to its former position, the peritoneum was brought together over it, and the abdominal wall was closed in the usual manner with deep and superficial stitches. On Jan. 4th, 1899, Mr. Coalbank writes to me that the patient "has lost her usual plaintive frame of mind and is well and happy; she has had no medical attendance since her return from the seaside after the operation."—*Lancet*, Jan. 28, 1899.

Cases of Prostatic Enlargement.

W. E. Reily, M. D., Bowling Green, Mo.

In view of the vagueness and absolute uncertainty of anything in the old school in the treatment of prostatic troubles, I desire in this paper, to give a few cases illustrating the action of *Saw Palmetto.*

It has been said that out of every ten men, nine have prostatic enlargement at some time between the ages of thirty-five and seventy-five.

Boocock's proving—*vide*, "Hale's Saw Palmetto"—shows that the symptoms of this remedy corresponds almost exactly with most of the prostatic troubles and especially to the condition of nerve irritation preceding prostatic hypertrophy. There is that same irritation of the neck of the bladder with difficulty in voiding urine; a sense of weight, usually accompanied by coldness of the adjacent parts with loss of sexual desire. Sometimes there is loss of prostatic fluid, at other times only the bladder symptoms. I can best illustrate what I want to say by drawing on my case book.

The following cases illustrate three of the most frequent phases of prostatic troubles in which *Saw Palmetto* has been useful in my hands.

J. Case I. Mr. J., age 56. Occupation, banker.

Previous history good until about six years ago when he first began to notice an extraordinary frequency in urinating which became so annoying that he finally consulted a physician who treated him for a long time with only temporary relief. He then went from one doctor to another with no better results, and finally becoming despondent and thoroughly discouraged began the usual round of patent medicines. After a period of three years of such experimentation he gave the whole thing up in utter desperation and as a *dernier ressort*, came to me saying he had decided to try homœopathy.

On December 28th I made a careful study of the case. finding the following characteristics:

Very despondent.
Irritable.
Sympathy seemed to anger him.
Great tenesmus in the neck of the bladder with heavy, aching pains, with *sense of coldness extending into the external genitals.*
Occasionally, sharp pains would extend upward into the abdomen and down the thighs, especially the left, which had been amputated at about the middle third, because

of a gun-shot wound at the battle of Vicksburg.

Appetite capricious.

Constipation chronic.

Urine normal in every particular except frequency.

Sleep greatly disturbed by frequency of micturition.

I gave *Nux vomica, Gelsemium, Cimicifuga* and other remedies which seemed indicated with very little improvement until finally I came across the pathogenesy of *Saw Palmetto* which so impressed me with the similarity of its symptoms to those of the case in hand that I decided to give it a trial. I gave a 5 drop dose of the tincture night and morning.

The result was all that I could desire. The improvement was steady from the first, the uncomfortable symptoms gradually disappearing until after eight weeks the tenesmus was all gone, the appetite was good, the bowels regular, the patient could sleep eight or nine hours without interruption and could hold his urine four or five hours during the day. With the disappearing of these symptoms went a very aggravation form of eczema on the hands of many years duration which I failed to mention in the previous history.

CASE II. Mr. M., age 45. Occupation, Superintendent of County Hospital.

Previous history good. Had been suffering for about a year with gradually increasing frequency of desire to urinate.

Very despondent.

Mind distressed.

Appetite capricious.

Little sexual desire, the indulgence of which is followed by dragging pains in the small of the back, some tenesmus of the bladder, but more trouble to get the water started.

Stream small and lacking in force.

Coldness of external genitals, with some pain of a dull aching character in the region of the prostate and extending to thighs and abdomen.

I gave *Saw Palmetto* 5 drops night and morning. Symptoms gradually improved until after three weeks there was no vestage of trouble whatever, nor has there been any return.

CASE III. Mr. E., age 35. Occupation, real estate and loan agent.

Previous history good.
Had bean troubled with frequency of urinating for about a year and a half.
Heavy dragging pains in the region of the prostate and extending into back and thighs.
Considerable loss of prostatic fluid at times.
Urine normal.
Pain in back much worse after coition.
Sexual desire very much impaired.

Prescribed *Saw Palmetto* 5 drops night and morning, effecting a perfect cure in two weeks.

I neglected to say that in each of these these cases there was a severe headache on the top of the head, and many symptoms of gastric catarrh all of which disappeared under the administration of *Saw Palmetto.*

I have also had remarkable success with this remedy in cystitis both acute and chronic, and have found it frequently indicated in ovarian troubles.

(It is a most valuable addition to our armamentarium and worthy of more thorough *proving* and clinical observation.—Ed.)—*The Hahnemannian Advocate,* Dec. 15, 1898.

A Case of Diarrhœa cured by Aloe.

By Dr. Lewis Whiting, M.D., Danvers, Mass.

Mrs.———, age forty. Morning diarrhœa for many years past, comes on every morning after rising and continuing till 10 A.M. Stools yellowish, thin, fœcal, accompanied by much flatus, and an immediate irrepressible desire for stool; cannot delay one minute. Aloe 30 was prescribed for the case, a powder dry on tongue night and morning. Having taken only four doses of the *Aloe,* the stool became of normal consistency, and the case became one of scabies over the entire body. Upon inquiry it was ascertained that she had itch when about ten years of age, and that it was treated by inunction of sulphur and lard, and she was of opinion that the diarrhœa had been her constant companion since about that time, a period of thirty years. She received no further medicine and in three days time the power of the drug that had produced the scabies also effected a *cure* of the same, with no return of diarrhœa.—*Hahnemannian Advocate,* Dec. 15, 1898.

THERAPEUTICS OF CONSTIPATION, DIARRHŒA, DYSENTERY, AND CHOLERA.

Remarks on the Magnesian Salts.

We have given the symptoms of four Magnesian salts, the Carbonate, the Muriate, the Phosphate, and the Sulphate. Of these the two first only are Hahnemannian, having a place in the *Chronic Diseases*. The third, the Phosphate, was proved after its introduction by Schuessler; the provings as they are and the arrangement of the symptoms in the schema form we have given in the double number for July and August 1897. Unfortunately these provings were conducted with high attenuations, not lower than the 30th and sometimes as high as the 1000th. The Sulphate was proved by Nenning with what doses not known, and by Hencke with from 2 to 12 grains of the 1st centesimal trituration. We have no means of knowing in what doses the Carbonate and the Muriate were proved, probably not less than the 3rd dilution. It will thus be seen that having been proved with such widely differing doses, a comparison between the symptoms of these salts cannot be properly made. We do however give a comparison in the hope that it may be of some use, at least of a suggestive character.

All these salts produce constipation and its opposite diarrhœa. The Carbonate and the Sulphate are known to produce diarrhœa in massive doses and by analogy we may infer the same to be the case with the Muriate and the Phosphate. But these salts having all been proved in dilutions and having been found to produce both diarrhœa and constipation, it is difficult to say which is their primary and which their secondary action.

MAGNES. CARB., MAGNES. MUR., and MAGNES. SULPH. have all very hard stools, which does not appear to be the case with MAGNES. PHOS. MAGNES. CARB. seems to have the hardest stool, as it has been likened to stone. The hard stools of MAGNES. CARB. and MAGNES. MUR. are often crumbling; the stools of the latter are described as knotty like sheep's dung, enveloped with thick mucus. The stool of MAGNES. SULPH. consist generally of a few hard pieces like nuts, not forming conglomerates like sheep's dung. The constipated stool of MAGNES. PHOS. is described simply as tedious stool, hard at first, soft afterwards.

Hahnemann speaks of MAGNES. CARB. as having shown itself especially useful in chronic diseases where among other symptoms *costiveness* is present; and of *Magnes. mur.* that it has done good service in constipation where the stools "are lumpy, hard, difficult, insufficient, retarded;" and in "chronic disposition to diarrhœa."

The following cases illustrate the utility of MAGNES. MUR. in constipation:

Case 1.—Child, aged 2 years. Diarrhœa and cough for several months; all at once the child became constipated, but the cough continued. *Nux. vom.* and *Bryonia* were given, but the stools only became harder, and would crumble when escaping from the anus. *Magnesia mur.* 6, five doses, and the next day the stools were natural and the cough gone.—*Dr. Lehman* in Raue's Record, 1871, p. 120.

Case 2.—A lady, age 26, was confined two years ago; and since that time has been troubled with constipation; ***stools, large and in hard lumps;*** bowels move about every eight days. Every few days has much pain and distress in the hypogastric region; pale and weak, otherwise well. Is in the habit of taking a cathartic every three days. The symptoms in this case are the true characteristics of *Magnesia mur.* It was given in the 200th dilution; one dose acted in twenty-four hours like a cathartic, but without pain, and in two weeks she reported herself as having a natural stool daily, aud feeling in better health than she had for the last two years.—*Dr. W. H. Burt* in Raue's Record, 1872, p. 150.

All the Magnesian salts produce diarrhœa, the sulphate giving rise to the most profuse, watery evacuations, which are generally sudden, colorless, and passed without pain, and accompanied by great thirst. Hence MAGNES. SULPH. is likely to be useful in painless diarrhœa and even in painless cholera. The diarrhœa of MAGNES. CARB., though often watery, is not profuse, and is generally greenish or even dark green, and sometimes yellowish or brown. There is a good deal of green mucus floating on green watery stools; or the mucus may be white like lumps of tallow. The stools of MAGNES. CARB. are the very opposite of painless; they are preceded by cutting and pinching in abdomen, attended by violent colic and straining, and tearing in anus and rectum, and followed by burning in anus and tenesmus. Hence clinically MAGNES. CARB. has been found useful in diarrhœa so characterized, as well as in dysentery where bloody mucus is mixed with green watery stools. Though in provings it has not been observed to produce sour-smelling stools, Dr. Guerusey has found MAGNES. CARB. useful in the sour-smelling motions of children when they look like the green scum of a frog-pond.

The diarrhœa stools of MAGNES. MUR. are also predominantly greenish, they may be also yellow or brown. They have not been described as frothy, but unlike the stools of the Carbonate, they are described as squirting out forcibly, and hence must be frothy. Like the latter they are also preceded, attended, and followed by straining and colic. They differ from the latter in being accompanied by protrusion of the rectum and by shivering all over the body. MAGNES. MUR. has actually produced dysenteric stools, that is mucus and blood, with tenesmus, during diarrhœa-like evacuations.

MAGNES. PHOS. has been credited with having produced sudden diarrhœaic stool, at first thick, dark-brown, mushy, then lighter, almost white and watery, finally mixed with blood. Some of the stools are profuse, like yellow clay mixed with water (enough for three ordinary movements). Sometimes the watery stools are said to be accompanied by vomiting and cramps in the calves. Hence it has been recommended by Schüssler and his followers for diarrhœa, for dysentery, and even for cholera.

Gleanings from Contemporary Literature.

TUBERCULOSIS.

By Thomas Clifford Allbutt, M.D., LL.D., F.R.S.,
Regius Professor of Physic of the University of Cambridge.

The Editor of The Practitioner is good enough to desire from me some expression of opinion concerning this important subject, one which has received so interesting a treatment at his own hands and those of his contributors. That I have anything to add to these previous opinions and records I cannot suppose; but some reiteration of the views of the older members of the profession may be of weight in pressing the subject upon public attention.

It is still with pain that I recall the sadness with which, in my early days, we were wont to recognise the presence of consumption in young and promising men and women, too often bright and interesting, or at any rate capable and industrious members of society. Well I remember the fatal—for such it then seemed—the fatal note of "consonating râle;" how it impinged upon the unwilling ear like a knell. For they nearly all died in those days. There were legends, indeed, in every man's practice, in every family circle, of lives plucked from the fire; but these rare successes gave us no confidence in individual cases. Statistics are no comfort to the individual; they have scarcely an application to his case. What comfort is it to the man, standing before you for a verdict, to tell him that 10 per cent. of his class will recover? As I have said, prognosis was very dismal in those days. For years the victim of phthisis might linger; for years his foe might sleep, indeed; but, sooner or later, the hand of death was laid, softly or harshly, upon him.

Then arose Henry Bennet, a keen and original thinker, and a good fighter. Smitten himself with phthisis, he determined to live; and Bennet was the practical maker of the "open-air cure." Bennet threw away all traditional coddling, and committed himself boldly to the open air. Day and night he lived virtually out of doors; but, not altogether freed from the bogey of "catching cold," he sought, and indeed, wisely sought, a climate in which such an experiment—for then it was little more—could be conveniently, pleasantly, and, as he thought, safely carried out. As we all know, he settled down at Mentone; there he lived in his beautiful garden, his old tower being but a summer and picnic house; and by night he slept without windows. After a while when he ventured to spend some part of the year in London, he found that, even in our climate, he could bear the well-opened window without harm, and thus grew bolder in his measures. A few years later, Archibald Smith Hermann Weber, Unger and others, discovered not only that consumptive persons could trust themselves to the open air, but that it was not necessary for this purpose to seek a warm or delicate air; that even in the Andes, and in the winter of the high Alps, results could be attained as good, and even better, than the records of the Riviera. In 1870 and two following years, tracing certain German rumours to their sources, I visited Davos, and helped to convey to English physicians the message of Dr. Unger, who, as he was wont to say, "triumphed at Davos over the Riviera." Then came Dr. Brehmer and Dr. Dettweiler, declaring not this climate in particular, nor that, but the fresh air of mother earth to be the essential remedy; and that the consumptive need not be banished to this distant country or that, but may find his homely remedy at his own door. Koch's discovery of the tubercle bacillus gave point and clearness to these conceptions; the modern system of treatment gave the physician new weapons and a new enthusiasm in fighting the enemy, and now we hear even the "consonating râle" with some approach to equanimity. A pathetic acquiescence in the delusive hopes of the sanguine *poitrinaire* has given place to cordial anticipation of cure. This line of progress and the likes of it, such as the serum treatment of diphtheria, have cheered both physician and patient, and largely transformed the face of medical practice.

Opinion, indeed, after its fashion, is now turning to the other extreme, and people are saying that any air will do; the raw damp atmosphere of English moorlands in winter, the bitter winds of our east coast, or even the murk and filth of London. Well, it is true that if the invalid cannot change his country he will do better to trust himself to such air as he has than to huddle himself up in dread of it. However, the best of our home atmospheres may be trusted too carelessly, even if they may be used by the discreet with success. In this respect, those who have the means to choose can find far better opportunities of enjoying the open-air cure; perhaps best by camping for months at a time in the deserts of Upper Egypt and Nubia, or of Syria; or, again, in the Asiatic, South African, American, or Australian prairies and uplands. Nevertheless, much and remarkable success may be obtained in England, especially in its more favoured regions; yet the best results are to be had at high elevations: at Davos or St. Moritz for the young and active, in the Andes and other balmier highlands for weaker or older patients; and next to the mountains come the great deserts, especially the Nubian, and after these the open-air treatment at lower elevations, a dry, equable, and bracing air being the best. The German institutions in my experience are unsuitable for English patients of the upper classes, the habits of life and the cookery being distasteful to them. A damp soil—and in England damp soils are too much with us—is injurious; cold and damp air favours catarrh, and catarrh favours tubercle. Persons of catarrhal bent should either leave England, or reside on dry uplands, as on the uplands of Hampshire or Sussex. Cases in which there is a proclivity to pleurisy or sore throat (of whatover kind) are better away from Alpine climates.

Are we to hope that consumptions, like smallpox, may become a tale of the past? If so, like smallpox, it must be banished by preventive means. Is there any prospect of such a consummation? Undoubtedly there is; and while we are perfecting our means of cure, let us not rest till these perfect means are no longer wanted. Tuberculosis has fallen into the class of infectious diseases, and must be resisted by the methods applicable to infectious diseases: these are—to seek for an antidote, and to abolish the immediate cause.

Happily, man is not a highly susceptible animal in respect of tubercle. Were man as the guinea-pig before tubercle, he would probably have been extinguished ere this, and the Editor's essays would not have been written. Some ten or twelve years ago I detected tubercle bacilli in swarms in the milk of one of my own cows. As this cow was a valuable one, I had turned too deaf an ear to some story of a cough, and her milk was continually milked into the pails with the rest. This milk, thus tainted, was not only consumed for weeks by my own family, including a little girl and her young governess, and by household servants old and young, but by two outdoor families, one including a young wife, the other a wife of some thirty-five years of age and seven children under twelve years old. For six months I anxiously awaited the consequences, but my little world happily said nothing to my tubercle; as it happens, none of this company has even yet fallen to tubercle. By not a few of these various folk, however, the milk was drunk freely as a food, probably for the most part unboiled.

Now, can this comparative immunity be raised into a complete immunity say, by a protective serum or other animal juice? Of such a prospect I cannot speak positively; but I have cognisance of certain unpublished laboratory investigations which are not without hope in this direction. Even if such an instrument be discovered, we may still prefer prevention to antidote, and banishment of the cause to prophylactic and curative vaccinations.

The researches of Koch and others have shown us with something like certainty whence the enemy issues for mischief, chiefly in the lung sputum of some of the sick, and in the abdominal discharges of others. It seems unnecessary to wait until we learn more of the life history of the parasite to act on the provisional supposition that herein are its chief lurking-places. Again—I here speak on my own observations—it seems probable that the bacillus does not cease from the sputum for an indefinitely long time after the apparent cure of the consumptive man. In the animal body again, as in the cow, it may lie without giving rise to eminent symptoms; issuing perhaps meanwhile in the milk, whether, we are told, the udder be diseased or not. The bacilli in the stools of the subject of abdominal consumption have also their billets; as, like typhoid bacilli, they may gain access to the drinking-water, or may reach the bodies of others by various other routes.

To say, as often it is said, that traps are set in vain for the tubercle bacillus in the common air, and therefore that it is not a generally prevalent blight, is, I think, too sanguine an inference. It cannot be doubted that we, all of us, are harbouring, or for the most part successfully expelling, the bacillus day by day. For example, in our own laboratories Dr. Sydney Sladen, working under Professor Kanthack, has lately made some careful investigations, from which he concludes that in a certain town more than half the dairies (nearly three-fifths) whose milk was examined, contained tubercle bacilli in quantity sufficient to cause tuberculosis in the guinea-pigs inoculated with it. These dairies are supplying not only the town in question, but some large institutions situated in it. Unfortunately, as Dr. Sladen observes, it is unjustifiable to assume that even the unconvicted dairies are safe; for it was repeatedly found that a dairy which on one day supplied milk negative in its reactions supplied infecting milk a few days later. It is obvious then that we are bound to put in force some such system as that of Professor Bang in Denmark. Probably in few of the dairies here alluded to was there any personal neglect, as neglect would at present be reckoned; all are registered under the ordinary sanitary inspection of the district, and all, or nearly all, the dairymen took an intelligent, helpful, and anxious interest in the inquiry.

In America, whence I have recently returned, among other characters of its remarkable people, I seemed to find a much quicker apprehension of new ideas; for instance, in every street-car, waiting-room, and other place of public resort, are placards forbidding persons, under a considerable fine, to spit, unless in proper spittoons. Everyone seemed to apprehend the reasons for this regulation, and willingly to acquiesce in it; although it has been asserted that the citizens of the New World were more prone to the habit than those of our own country.

In suggesting that prevention of the cause may be better than prevention of the disease, I do not forget that with abolition of the tubercle bacillus, or at any rate with the exclusion of it from the avenues of the human body, we may favour the growth of a people unselected in this respect, one less antagonistic to the pest, one less inured to invasions. This argument, of course, is one which haunts us in all such prophylactic measures; and the only reply to be made at present is that we must fulfil obvious duties, with some neglect of distant and somewhat visionary consequences. If, however, by the experiments of which I have professed some cognisance, we should attain the discovery of a preventive serum, or other matter, which can not only bring about greater resistance to tubercle in persons already attacked, but can also confer an anticipatory immunity, like that of vaccination in smallpox; and if, again, such protection be found to have a substantial permanence, it may be a question whether such a means may be preferable to barring out the cause; whether, that is, in this way an immune population might persist. But at the present stage these inquiries are too curious.

Whether we should register cases of tuberculosis; and whether we should isolate infected persons, is, however, presently under discussion. In the large cities of the United States registration is making great way; the social and other hindrances to registration in England seem considerable; still, registration will probably come about. When we demand isolation we are, I think, fanatics; that is, we are driving hard one set of arguments with a blind eye to contingent and conflicting considerations derived from other circumstances which we ignore, or to which we are insensible. This is to be "logical," as our French neighbours call it. Would it have been for the public good to have isolated Henry Bennet or Andrew Clark in the midst of a beneficent career; or now, on early suspicions, to carry off young people to desert islands, to break up families, or to banish a breadwinner on the rather remote chance of consequences which we are learning successsfully to neutralise? An old friend of mine came to me with well-marked pulmonary phthisis fully fifteen years ago; he was, and happily still is, a keen sportsman, and one who detested the notion of exile. He was a married man with four children (still healthy and now out in society), and he was subject to overt gout—to podagra—a good sign in the tuberculous, as in the overtly gouty the tendency to protective "fibrosis" is stronger. So I said, "Live still in the open air, but even more so; take certain proper precautions about your expectoration and the like, and continue your present life." This patient has still phthisis—advanced phthisis—in both upper lobes; but he hunts four or five days a week, and is still a forward rider, with one of the fastest packs in the shires. He is a good neighbour, a good father, a good friend, and a happy man. And some of us would have shut him up fifteen years ago! Now such cases occur abundantly in every doctor's practice.

Our instant business, to withstand the multiplication of the bacillus as best we can, suffices for us; we may avoid it far better than we do at present, and we may awaken in the English public a quicker perception of the value of ideas in these, and, for that matter, in all subjects of thought than at present prevails, for your ordinary Englishman is as dull to ideas as he is valiant in action; and thirdly, we may provide for the victims of tubercle some instruction in the best cure at present known, namely, the open-air cure; and see that some tolerable means for carrying it out are within the reach of all classes of the commonwealth.

Finally, is the "open-air cure" a cure for consumption only? Are not the virtues of fresh air rather indirect and confederate than specific in their functions? Even from the airiest room we are warned that "ozone" is absent. In the treatment of many other chronic diseases the open air may be an invaluable ally; in the treatment of typhus fever I proved and published its value thirty years ago, and oftentimes since have seen its value in infective and septic affections of many kinds. Nay, Mr. Auberon Herbert has eloquently proclaimed the virtues of the open air, for the so-called healthy man, any time this ten years or more; and longer ago than that, at his house in the New Forest, had carried out his principles in as thorough-going a fashion as the most modern "air specialist" of them all.

I have said nothing about the incessant and minute medical supervision which it is fashionable to regard nowadays as an essential part of the cure of consumption. Close medical supervision and a consistent method of life are good for all maladies; but even in the visits of two doctors there may be satiety. It is necessary that the patient be watched till the physician has learned all that he has to learn of the patient, until he has impressed his will and instilled his hopes into the patient; but, this done, say in two or three weeks, unless in the case of feather-headed or obstinate persons, no such numerous assistance is necessary or even desirable. In our institution the routine of the house will regulate each individual, and the doctor's visits to each may be rarer, unless some symptoms of ill omen appear.

For a patient treated at home, a careful mode of life must be prescribed on paper, and superintended by some steadfast and sensible friend. To proclaim that the daily, nay, even the hourly, return of the physician is an essential part of the cure is, I think, mischievous, if it were only that the enormous cost of it would make the provision of houses for the open-air treatment for the poorer classes almost impracticable.—*Practitioner*, January 1899.

THE OPEN-AIR CURE OF CONSUMPTION.

A PERSONAL EXPERIENCE.

In an article, 'Tuberculosis in Man and Beast,' in this Review for October, Sir Herbert Maxwell has made a clear and telling statement of the case in favour of immediate action being taken to combat the terrible disease, tuberculosis in cattle, which so affects the interests of man. In his paper he brings together all that is supposed to be known about the disease, but stops short of suggesting any means of suppressing and eradicating it. The best he has to offer is the system of partial isolation—which is really no isolation at all—of unsound from sound animals as carried on in Denmark. The sound and unsound animals are kept under the same roof and are separated only by a moveable partition. If such a system were adopted it would do harm rather than good, for such half-measures would only prevent more radical steps, which are an absolute necessity, being taken.

It may not be out of place here for me to make my excuses for taking it upon myself to write on this subject. As Sir Herbert Maxwell puts it, a layman speaking to laymen may be more easily understood than a scientist; and with laymen it finally rests whether any steps are to be taken in such matters or not. I may be qualified in a degree to speak, since from my training as a chemist I may not be quite so ignorant of the subject as I otherwise might have been, and, moreover—and this to me is excuse enough for writing—I have myself been a consumptive, affected with acute phthisis, and yet have been perfectly cured by the rational treatment which I will aftewards try to explain. I therefore think that I am to some extent entitled to speak, since I know, from my own case, more about this disease than most scientists could possibly know by theory, for I have found out, by bitter experience, what are the best possible things for consumptives, and what the worst possible. Indeed, I could not help writing. For three years I have watched the blind gropings after the truth of the most learned scientists in this country. I have watched the half-truths they have—not discovered—but been driven by Continental scientists to acknowledge, and the wrong positions they have taken up, while all the time thousands were dying who might have been saved, and I could keep silent no longer.

Perhaps the best way for me to treat the subject is to start with my own case, and then to show how it is possible to save practically every consumptive person in this country, if only public interest could be aroused, and the necessary means employed to bring about a result so desirable from every point of view.

In the summer of 1895 I completely broke down in health. I was at that time twenty-eight years of age. I must have been ill for some very considerable time—perhaps eighteen months or two years—without realising the cause of my excessive languor and weakness. I was examined by Drs. A. B. Mitchell and Whitla of Belfast, who both told me the same thing—that my case was very desperate, that I was suffering from acute phthisis. My weight, as taken by Dr. Whitla at that time, was 9 st. 7 lb. I was ordered to stop work and go into the country to live, and to have complete rest. No one, myself least of all, ever expected to see me well again. At first I got considerably worse. Weakness became more apparent, night sweats more copious, cough more severe, and throat, &c., inflamed. I set my house in order, believing firmly that my days were numbered, and that they were few. Gradually, however, I began to gain weight, owing to the nourishing food provided for me by my friends. I should think that during the three months I stayed in Ireland I drank more than half a gallon of milk every day. When I had been three months in the country a friend advised me to go to Nordrach, in the Black Forest, where he had himself been, and where he had received more good and made more progress in a few months than he had in the previous seven years, during which, as I knew, he had been ill of phthisis. He had been two voyages to the Cape, two winters at Davos, and in fact had tried every known remedy and treatment without any result. Then he heard of Nordrach, where he finally got cured. He is now quite well and strong, is living in England winter and summer, and attending to his business. I decided to give Nordrach a trial, for, from what my friend said of the treatment there and of its results, I could well believe that it was the most likely way of effecting a cure, if the cure of such a disease were possible.

I arrived at Nordrach early in October 1895. My weight was 138 lb., or 9 st. 12 lb. I left Nordrach towards the end of January 1896—in three and a half months—quite cured. During that time I had gained almost 3 st. in weight. On my return I weighed 176 lb., or 12 st. 8 lb., and my chest measurement had increased 6 inches. I here give my weight and gain per week during the progress of my cure.

First week, 12th of October, 1895, 138 lb. or 9 st. 12 lb.; second week, 143 lb.; third week, 147 lb.; fourth week, 149 lb.; fifth week, 153 lb.; sixth week, 157 lb.; seventh week, 160 lb.; eighth week, 163 lb.; ninth week, 165 lb.; tenth week, 168 lb.; eleventh week, 168 lb.; twelfth week, 169 lb.; thirteenth week, 170 lb.; fourteenth week, 173 lb.; fifteenth week, 174 lb.; sixteenth week, the 24th of January, 1896, 176 lb. or 12 st. 8 lb.

Since that time, now almost three years ago, I have kept in perfect health and maintained a weight of from 12 st. 4 lb. to 12 st. 7 lb., at which figure I at present turn the scales. It is certainly a struggle to get up one's weight, but when that has been accomplished one has only to eat a normal amount to maintain it. I have now of course no cough, my lungs are quite healed and not a trace of tuberculosis left, and I am quite as likely, to remain sound as any person who has never been affected—more likely, I think, because I know how to live and what to avoid. I have since my return been examined by doctors who knew me before and during my illness, and they have all pronounced me perfectly sound. Quite lately, in July, before the British Medical Association in Edinburgh, some of the greatest authorities on the chest examined me and found my lungs quite healed and in a healthy condition. If my case were an isolated one it would convince nobody, some other cause would be adduced to account for the recovery, but it is also the case of hundreds of others who have been perfectly cured at Nordrach, and who have been fitted again to take their part in the work of life. I may say that I have worked as hard since my recovery as ever I did in my life, but with considerably altered methods, and with a deal more care to the essentials of rest and nourishment, and the avoidance of the things—such as impure air—which tended to bring about my breakdown. I may mention that the windows of my house are never closed, but are kept open winter and summer, with nothing but the best results; that I never wear an overcoat or carry an umbrella in the wettest or coldest weather; and that I have been drenched dozens of times without changing my clothes or catching a cold. This generally is the mode of life followed by those who have been to Nordrach. Before going there they are weakly dying consumptives; on their return they are strong, hardy and healthy men and women, capable of standing any climate—and *climate certainly has nothing to do either with the cause* or the *cure of consumption*—provided they lead the reasonable lives that all of us, strong and weak alike, should lead. It may be said that these cures are not permanent; but it is in their permanency that they are so different from many improvements in condition received elsewhere, which seldom last. Cases that were cured ten years go, when Dr. Walther first started his treatment at Nordrach, still remain quite well, and will continue well so long as they live within the bounds of reason. I have been back at work three years, and feel better now than when I returned.

I was formerly always thin and delicate, subject to constant colds and ill-health. During the last three years I have not been absent from business a single day through illness, and my general health is completely restored.

I emphatically affirm that consumption is not a fatal disease, that not a single life should be lost through it, if only the proper means of grappling with it were employed.

It is not for me to enter into the scientific aspect of the disease. An excellent paper on Nordrach is contributed by Dr. R. Mander Smyth, himself a patient cured there, to the *British Medical Journal* of the 1st of October. I shall, however, give a rough outline of the treatment as carried out by Dr. Otto Walther, and to a great extent originated and perfected by him at Nordrach, in the Baden Black Forest, Germany. The results he obtains are so much better than are got at any other sanatorium that Nordrach is the best place to take as a pattern when erecting sanatoria in this country.

The three outstanding features of Dr. Walther's treatment are:—

(1) *Over-feeding.*—Dr. Walther holds that there can be no cure without weight-gaining. He carries this to its logical conclusion, and stuffs his patients to their utmost capacity. It is amazing the amount one *can* eat when forced to it; twice or three times as much as one would feel inclined to eat. There is no harshness used, but somehow the Doctor is able to make every one eat the amount necessary. The food is of ordinary kind, but consists of plenty of milk, fats of all kinds, meats, potatoes, vegetables, butter, bread, cheese, fruits, sweets, &c. The gain in weight is often enormous. I have known a patient to gain 8 lb. in one week, and another to double his weight while at Nordrach. Every one gains weight. Each patient is weighed every week; and as there is a friendly rivalry as to who will gain the most, there is a stimulus to good eating. This over-feeding causes no ill effects; indeed girls come there who have taken very little solid or nourishing food for months, and start at once on this heroic treatment, showing signs of immediate improvement. We used to say amongst ourselves, or when impressing on a new comer the necessity for eating largely, that we had to eat three times the ordinary amount of food; one portion to replace natural waste; a second portion to replace the extra waste from the disease; and a third portion to put on weight so that the system might be strengthened and finally get the better of the disease. As the

weight increases the patient begins to feel more fit, and to realise that at last he has stumbled on the right treatment. The cough leaves him after the first few weeks. This irritating cough is nothing but an ordinary cold which the patient has all along been too weak to throw off. But now he is able to master it, and as a consequence his lungs get more rest and he himself more sleep. The chest begins to expand, the lungs to heal, and little by little, unconsciously and without effort, the patient's bent shoulders begin to straighten. Every fresh sign of returning health is of untold encouragement and good to him; and besides he sees others getting cured and leaving for home. There are three good meals a day. I am sure there is no place where there is so much food consumed per head as at Nordrach. And that by dying consumptives who are generally supposed to have no appetite! The meals are at long intervals, and there are no snacks allowed between whiles. Breakfast at 8, dinner at 1, and supper at 7 o'clock. Patients are required to be in their rooms to rest on their couches for an hour before each meal. Immediately after a walk one is too tired to eat well, but when an hour's rest has been taken one has as much of an appetite as it is ever possible at Nordrach to have. Resting is always to be taken stretched out at full length on a couch, as in that way the maximum amount of rest is obtained. No medicines are ever given, as they can do no good, and only upset the stomach.

(2) *Regulation of the amount of exertion and rest.*—Doctors at home little realise that this is such an important matter. Certainly there is nothing so harmful to a consumptive patient as over-exertion in any form, mental or bodily. Even too great intentness in reading a novel, or, let us say, the excitement and engrossedness of listening to a concert, are injurious. Dr. Walther gives great attention to this matter of regulating the amount of exertion, for he says that more consumptives kill themselves by doing too much than in any other way. Each patient has to take his temperature, by the rectum, four times every day, and to note it on a chart. The Doctor visits him three times a day, and can tell at a glance from the temperature chart if the patient is doing as he ought, and instructs him accordingly; whether he is to be in bed, to lie on his couch, to sit outside, or to go a long or a short walk. When there is fever the patient is required to be in bed until such time as the temperature becomes normal. In old-standing and obstinate cases this is sometimes for months. When in bed the patient is expected to eat quite as much as when going about. Walking is generally uphill, and always at a snail's pace, so that the lungs are exercised without being exerted, and are thus strengthened and healed. These walks are increased in length as the patient grows stronger, until by the time he is quite cured he is allowed to walk long distances, say ten miles, and is so thoroughly hardened and confirmed in health that he is able on his return home to at once resume work. When cured, the erstwhile patient is sent back to this country as readily in mid-winter as in midsummer. Winter in fact is the best time for consumptives under the Nordrach treatment, as then they eat more and gain weight more rapidly. Ten hours' sleep every night for each patient; to bed at nine and up at seven o'clock. Though one may not be sleeping all the time, yet one is resting. The Doctor is very much displeased when any one disregards his instructions on these matters. Indeed the patient soon finds out for himself that the laws laid down are for his good. Over-exertion to the length of fatigue results in return of cough or fever, or tells a tale in some other unpleasant way.

(3) *Pure air.*—From the moment of arrival until leaving Nordrach the patient never breathes one breath of any but the purest air, as Nordrach is in the Black Forest at an elevation of 1,500 feet, surrounded by trees, and a long way off from a town or even a village. The casement windows

of the sanatoria are kept wide open day and night, winter and summer, and in some instances the windows are taken completely out of the frames. Thus it is practically an out door life the patient lives continuously. There is therefore no danger of chills on going out in any kind of whether or at any hour, as the temperature within and without is equal. So pleasant does this living in the open become, and so hardy is the patient made, and so invigorated, that on his return to this country it is the greatest misery for him to have to remain in a room with closed windows. Being at such a considerable height—1,500 feet, with a rise in the longer walks of another 1,500 feet—the patient, to get the same amount of oxygen into the system must breathe relatively more of the rarefied air, and thus expand the lungs. In this way the lungs are completely flooded with pure air; all the odd corners and crannies, which he has hardly used for years, are ventilated, which the easy walking uphill is eminently calculated to effect, while at the same time the almost absolute rest the patient enjoys allows the lungs to be practically undisturbed, and so permits the healing process to proceed. The climate is much the same as at home. There is quite as high a rainfall, and in winter it is much colder. But it has been demonstrated beyond a doubt that climate has absolutely nothing to do with the case. There the patients, who go out regularly, day after day, in all kinds of weather, sometimes walk for hours at a time in the rain, without ever thinking of changing their wet clothes afterwards. This course I still adopt, and find that such a wetting—sometimes twice in one day—never does me any harm whatever. I asked Dr. Walther if he thought his system could be carried on with hope of success in this country. He said that it could be worked here quite as well as at Nordrach, or as in the balmiest clime; that all that was required was a place where pure air was to be had, situated well away from a town, at a fair elevation, and the man to see that the system was properly carried out. I am now convinced that this is perfectly true. Absolutely nothing else is needed. Freedom from wind, a high average of sunshine, dry climate, and all such other things as are generally supposed to be so necessary, go for nothing. And this is the crux of the whole matter. It is possible to cure here, on the spot, almost all the people of this country who are ill of phthisis! Why, then, are sanatoria not erected at once to cure the hundreds of thousands of those who are ill, and who have not the means to go abroad—hundreds of thousands who are as certainly doomed to death as if they were already under the sod, if some such steps be not at once taken? It is sad to think that all these people must die, when they might easily be saved.

These are the three features of the cure: nourishment, rest, and fresh air. Of course there are details in the treatment. Every patient is examined once a month, both as to his lungs and sputum. Each month the symptoms of disease become less and less evident, until there comes a time when the Doctor, after examining the patient's chest, will say, 'I can hear absolutely nothing.' That indeed is a happy moment for the patient. The lungs are quite healed, and the sputum likely to be free from bacilli. After assurance is made doubly sure by injecting the sputum into a guinea-pig, and waiting a few weeks to see that there is no unfavourable result, the happy patient—now a patient no longer—is free to leave Nordrach and go whithersoever he listeth. As a matter of fact, their most intimate friends often do not recognise in the stalwart, broad-chested fellows the dying consumptives they knew but a few months before.

Only forty to fifty patients are taken at Nordrach. Dr. Walther says it is impossible to properly overlook more, and it can be easily understood that he is besieged with applications for rooms long before he is able to accommodate the applicants. It is in the matter of this effective supervision that the results got at Nordrach are so much better than can be obtained elsewhere. If one thinks for a moment this will not seem strange. At

Davos and such places friends of the patients and others unite with them in having a good time, and render it almost an impossibility for a cure to be effected. Nordrach, as far as I can discover, is the only sanatorium where this thorough, constant, personal supervision is exercised, and it tells in a marvellous way in the results. Instead of twenty-five to thirty per cent. cured at other sanatoria, and those only the most favourable cases, ninety per cent. I should say are cured at Nordrach, and many of those would be cases of the very worst type and of the longest standing, that had most likely come from other sanatoria to Nordrach as a last resort.

Taking all cases—favourable and unfavourable—the average time necessary to effect a cure is five to six months Some are cured in two months, others (a few) need as many years. As to what is a hopeless case there is no saying. I think Dr. Walther never gives up hope. Certainly he has cured cases that were considered absolutely hopeless by every other authority. But it is to be hoped that, with increasing knowledge and better precautionary measures, such cases as are almost beyond all hope will no longer be met with, so that soon there should be no doubt as to every one being cured, if only we set about establishing a rational system of treatment on a proper scale.

The advance in our knowledge of tuberculosis of late years has been immense. It is now no longer considered, in the best-informed circles, as incurable, and it has been proved beyond doubt that it is *not* hereditary. There is never disease, active or latent, in the offspring unless the womb itself of the mothor is diseased—a *very* rare occurrence. In the case of cattle, as veterinarians know, it has been proved that it is not an hereditary disease by the experiments conducted by Sir Thomas Gibson-Carmichael, M.P., in his pedigree herd at Castlecraig, some of the soundest and best-known animals of which have been bred off tuberculous parents. The idea that it was an hereditary disease got abroad no doubt in somewhat the following way. In a family in which one or both of the parents are consumptive the children are constantly in contact with an infectious disease. The fact of the parents having fallen victims to the malady is an indication that they were weakly constituted. The children are naturally weakly constituted also, and are therefore liable to take this or any other infectious disease. That is all. To begin with there is certainly no disease in the children's systems. But living in the same unhealthy surroundings and bad circumstances as their parents, and being badly nourished, either from necessity or through a constitutional distaste for proper nourishing food, they naturally sooner or later most likely contract the disease. This gave rise to the idea that consumption runs in families. But if the children were taken away from those bad surroundings, and brought up rationally and healthfully, they would be quite as free and immune from the disease as the children of the healthiest parents. On the other hand the very healthiest people, with the best possible 'family histories,' become afflicted with phthisis through disregard of the laws which make for health. So long as the body is in health, well nourished and well cared for, there is no danger from infection. One may then, without any danger, commit the generally considered suicidal act of going out in rain for hours without overcoat or other protection, and without afterwards having a change of clothing, and do many other such terrible things without any other result than an increased belief in the wisdom of keeping strong in order to defy disease. It is only when the system gets below par, through some of the hundred and one agencies that tend to reduce it, that there is danger. Then the disease germs that are everywhere are ready to take hold of their victim, when the blood agents have not the vitality to overcome and exterminate the intruders.

This, then, is what we know about tuberculosis. It is quite curable; it is not hereditary; it is not developed spontaneously, but directly by infection either by food, or inhalation, or other such means. The communicability of phthisis is coming to be realised in earnest. In New York it is as compulsory to notify a case of consumption as to notify a case of any other infectious disease. *And what is true with regard to tuberculosis in man is equally true with regard to tuberculosis in cattle, for it is exactly the same disease, developed in the same kind of organism and amenable to the same treatment.* What that treatment is I have endeavoured to show. There could not be produced, I believe, an authoritative cure from tuberculosis by any other means than by those I have indicated. Certainly the usual remedies, such as injection of tuberculin, administering guaiacol carbonate, creasote, &c., produce no satisfactory results. Cod liver oil as a curative agent is not in the question, as it is practically the treatment I speak of in one of its branches—namely, seeking to build up the patient's system by added nourishment. But cod liver oil is not such a good form of nourishment as the more natural fats and foods, such as butter, milk, and fat meats, etc., since it has the tendency to produce nausea. Take the case of any one, who has been cured of tuberculosis by apparently other means—say an invalid who had gone to Australia. The chances were great against his recovering there; but granted that he did recover, it was not by taking medicine that he got better. I contend that his recovery was entirely due to the three remedial agents: plenty of good food, rest, and fresh air. These are just a reversal of the conditions which brought about his illness. When he went to Australia it was either to do no work or to take up some very light employment. He lived in the bush an open-air life, and as a consequence of the change for the better in his surroundings his lost appetite returned, and he soon began to gain in weight. This gave him a start, which he was able to improve upon until he was quite cured, when it is certain he could be no other than a big burly fellow in comparison to his former self.

Perhaps the use of tuberculin, of all the attempted cures, is the most likely one to prove serviceable. But at present it is valueless, as even Professor McCall Anderson, who writes in the *British Medical Journal* of October 1 on 'A Plea for the more General Use of Tuberculin,' has to admit '...... This improvement,' consequent on the injection of tuberculin, 'is but too often temporary, the morbid condition relapsing sooner or later after the treatment is stopped. The accuracy of those observations cannot be gainsaid." He goes on to say that, in addition to the injection of tuberculin, other means should be resorted to, such as good food, pure air, and other antistrumous remedies.

There is no saying of what use tuberculin may prove to be in the future, when its preparation and proper use have been thoroughly mastered, when used in conjunction with the Nordrach treatment. It is believable that it might prove to be of great utility in arresting the development of the disease, or perhaps in completely eliminating tuberculosis from the system, leaving the rational treatment, under better conditions, to rapidly build up the system and ensure a permanent cure. I think it is probable that, even now, such forms of the disease as lupus would yield to the proper use of tuberculin, if at the same time the patient's system were thoroughly nourished and built up. It has lately been reported that Professor Denys, University of Louvain, has discovered a new serum by which he affirms he can cure tuberculosis, which contention it is said he makes after exhaustive experiments. It is to be hoped that this is so, and that it is not another false hope such as Koch and Verneuil raised. But, even if it be true, it is certain that the injection of a serum could not possibly build up the shattered system. The very best it could do would be to arrest the disease by destroying the bacilli, and therefore in any case the Nordrach system would have to be resorted to in order that the strength might be restored.

Sir Thomas Grainger Stewart says that tuberculosis destroys as many lives as all the zymotic diseases combined, 50,000 to 70,000 dying annually from it in the British Isles. It accounts for at least one-sixth of the total death-rate. At a moderate estimate it affects 30 per cent. of all the cattle in this country. The question is, How are we to make use of the knowledge we now possess in the alleviation or eradication of such a scourge? Evidently, since it is infectious, the first step towards mastering it is to stop the spread of the disease by keeping healthy subjects from becoming affected. The next step is to cure those who are affected, and at the same time, by periodic compulsory examination of all subjects, to discover at once fresh cases. These fresh cases would be affected in such a slight degree that they would easily and quickly be restored to perfect health. By these means—preventing the spread of the disease, curing to the utmost extent the existing cases and singling out at once fresh cases for removal and treatment—tuberculosis in man and beast would at no distant date be eradicated, and a death from such a cause would be as rare in this country as a death from leprosy.—*Nineteenth Century*, January 1899.

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THE VICEROY ON WESTERN MEDICAL SCIENCE.

THE utterances of Lord Curzon ever since his designation to the Viceroyalty of India have been an agreeable surprize to all classes of people here. His Lordship took the first opportunity after his nomination to give out his mind about the country he was to rule and the duties of the viceroy in a way which showed not only the genuine earnestness and the fervid enthusiasm of his nature, but a keen sense of responsibility rare in these days,—qualities without which no amount of mere ability can fit a man to be a ruler of millions of his fellow-beings, far less of the millions of India with a glorious past and a deplorable present.

It is said that it does not cost a man anything to be sympathetic and kind to his fellow-creatures. We do not think this is a correct view of human nature as it is. If it really did cost nothing, if indeed it was easy to feel for others, to love our neighbours as ourselves, then the world would have been different from what it is, and it would not have required prophets to preach that doctrine even at the expense of their lives. Whether it is an acquired perversity through a primeval fall, or whether it is an original constitutional fault inherited from ancestors other than our seeming kind, the fact is that love of self is still the predominant passion, and that from this have sprung all the evils against which prophets and reformers, poets and philosophers, have raised their voices in all ages and in all countries, and we must say, not always in vain. We believe, and the history of the world proves, that it is really an effort to rise above self, and a most stupendous effort for a man to sacrifice self. And, therefore, unselfishness and philanthrophy are really meritorious and worthy of the highest praise. Hence it is that our new viceroy's utterances have called forth the admiration and the gratitude of all our countrymen.

Lord Curzon has thus raised the most sanguine expectations in all that he will do all in his power for the good of India. It is true, as he has himself warned us, that the time for congratulation is not when he is putting on, but will come when he puts off his armour, that is, when he lays down his office. Nevertheless, the heart of all India is throbbing with the hope that he will be true to the words he has already uttered. Hence all his utterances and all his acts are being watched with eagerness, not unmixed with some anxiety. And hence it is that we have ventured to offer a few remarks on a recent utterance of His Excellency of which it is necessary in our humble opinion that he should see the full significance.

Speaking at the last annual meeting (on March 3) of the Countess of Dufferin Fund for supplying Female Medical Aid to the Women of India, his Lordship had to allude to the return of the European Aryans to their Asiatic brethren as their conquerors, but he did so with a delicacy which only a real and genuine recognition of kinship could dictate, which while it softened the position of the former in respect of the latter, gave broad and unmistakable hints to the former as to their duties and responsibilities the fulfilment of which only was the justification of their intrusion. European Aryans had, in their long sojourn in the West, acquired much knowledge and made many discoveries, and it was their duty to make their brethren of Asia sharers of those blessings. Lord Curzon enumerated these blessings under four heads, of religion, law, literature, and science, and made appropriate observations under each of these. With respect to the three first, he wisely remarked, "some doubts may be legitimately entertained," and pointed out in a most admirable spirit of tolerance what the grounds of those doubts may be. But as we are concerned with the last gift we will confine ourselves to a consideration of the remarks which fell from his Lordship on this subject.

"And now I come to the last boon, which is science, and medical science in particular," said his Lorship, "and about this I say that no two opinions can possibly be entertained. There may be prejudices, and there may be scruples arising from long custom, or from ignorance, or from other causes, but doubts there cannot possibly be; and I say this, that if we had come back to you from the West with our medicine in our hand, and with that alone we should have been justified in our return. For what is this medical science that we bring you? It is no mere *collection of pragmatical or experimental rules; it is built on the bed rock of pure and irrefutable science."*

As regards science in general, medical science excepted, we are in full accord with the Viceroy. In India we had no science properly so called, not even the rudiments of any. Even the most ancient of sciences, astronomy, perhaps of Indian origin, has remained at the lowest stage, as it could not but without the law which governs the movements of all matter, including the heavenly bodies, the law of gravitation. Beyond the practical knowledge of making a few compounds arrived at by repeated trials and lucky guesses, chemistry as a science did not exist. The same with the mechanical sciences. Physics, without electrostatics, electrodynamics and magnetics, without optics, without acoustics, all which are the most modern sciences *par excellence*, could not possibly exist and did not exist. There was no anatomy and no physiology, and therefore biology, vegetal or animal, did not exist. Art we had in abundance; most exquisite and even stupendous art, art which to this day is the admiration of the world and is still inimitable, but it was art which depended for its development not upon scientific knowledge but upon delicacy of the fingers, upon the æsthetic faculty, and upon long continued hereditary practice for ages. So it is no exaggeration to say that science is a real gift from our Western brethren, a gift of inestimable value, inasmuch as it has given us not only material comforts unknown before, but has enabled us to read the works of the Creator in their true nature, as they are, not as they are pictured by our imagination, and has thus been the means of correcting our misconceptions of the objects around us, misconceptions which are the parent of all superstition and false religion, the greatest curses of the world.

We have spoken of science in general, excepting medicine, advisedly. For all other science than medicine has arrived at the positive stage, that is, a stage at which all controversy and difference of opinion about fundamental principles have ceased, and there is perfect unanimity about the law or laws which govern the whole body of particular sciences. The votaries of medicine alone still continue divided in opinion as to what the fundamental principles are or should be, or how they should be applied. The difference of opinion in medicine still is so great as there would be in astronomy if the Ptolemaic theory of the heavens with the Cartesian vortices were the belief of the majority of astronomers and the Copernican system with the law of gravitation of a small minority. It is a fact, not much to the credit of the medical profession at large, that though the true law in medicine was discovered just a century ago, it still continues not only unacknowledged and unrecognized by the largest majority, but those, whom conscience [illegible] compelled to avow its truth and to adopt it in their practice with benefit to their patients, are being persecuted with a degree of severity and intolerance which is a disgrace to men who profess to be men of science. It is this lamentable fact which has prompted us to lay our views before the Viceroy.

To make ourselves clear it is necessary that we should point out that medical science is a vague term. Ordinarily, in this term are included all the preliminary sciences, a knowledge of which is essential to a proper understanding of medical science proper. These are human anatomy and physiology, physics, chemistry, botany and zoology. To these have been recently added comparative anatomy and physiology, biology as a distinct science, bacteriology, and hygiene. If the proper function of medicine be defined to be the treatment of disease by drugs, then the sciences above enumerated form but auxilliary though indispensable branches of medicine. But if the function be to cure as well as to prevent disease, then medicine should include hygiene as an essential branch. Even taking this comprehensive view of medical science it must be admitted that the treatment of disease by drugs, or therapeutics as it is also called, must be pronounced to be the most important branch.

The question naturally arises, what did the Viceroy mean by medical science. He himself asked the question, "what is this medical science that we bring you?" and answered it thus: "It is no mere collection of pragmatical or experimental rules; it is built on the bed rock of pure and irrefutable science." If His Excellency meant the auxilliary sciences mentioned above, and hygiene was included in them, then his words are literally true. For these sciences have been and are being cultivated by what we must now call the old school with a zeal and in a way so as to leave nothing to be desired. They have been and are being daily advanced with a rapidity which is astonishing. New light is being thrown on the etiology of disease. The morbid changes produced by disease are being brought to light with improved instruments of research. New instruments (the latest being the X-Ray apparatus) are being invented for the exploration of the interior of the body. The result of all this is, that diagnosis, so far as the localization of morbid lesions, morbid products and foreign bodies is concerned, has been brought almost to perfection, and surgery has become as audacious as it is successful.

Now what of therapeutics or medical science proper as cultivated by the old school? Has it not been, as described by its own professors, a science of fashions rather than of healing? Has not fashion in treatment ruled among practitioners of medicine just as fashion in dress rules amongst the fair sex? Dr. Walter Carr, at t[illegible]ning of the last session of the Royal Free Hospital School of Medicine for Women, chose the "Influence of Fashion in Medicine" as the text of his introductory address. "It is interesting and instructive, albeit somewhat humiliating, study," said he, "even if we confine ourselves to comparatively recent times, to follow the influence and vagaries of fashion in pathological theories and dogmas and still more in the domain of treatment." He passed in review "a few of the chief methods which have been popular in the treatment of fever and inflammation as exemplified in such well-marked and relatively common diseases as pneumonia, typhoid fever, and rheumatic fever." At first blood-letting and mercurialization and starvation up to and even beyond tolerance prevailed, followed by a tremendous reaction of overfeeding and over stimulation with enormous quantities of alcohol. This in its turn was followed by the Temperance Hospital where all alcoholic stimulants were forbidden. Then came the fashion of trying to reduce the temperature either by the direct application of cold or by the administration of drugs, which received the name of antipyretics, such as antipyrin, anti-febrin, phenacetin, &c. It was not till hecatombs of patients had fallen victims to this rational and most scientific treatment, was the discovery made "that even though it was possible to reduce the temperature it was not equally possible to relieve the attendant symptoms; that although we might cut short a pyrexia we could not cut short the disease of which the pyrexia was merely one of the symptoms; and, further, whilst we were attempting exclusively to relieve the one symptom, the high temperature, other symptoms might get worse and even new ones might develop."

Referring to the various ways in which fashion has from time to time swayed pathology, diagnosis, and treatment of other diseases than fevers and inflammations, Dr. Carr exclaims, "What an opening is afforded for the medical cynic by the way in which newly discovered drugs are boomed, recommended as remedies in every possible disease, and lauded as sovereign cures for a dozen diverse conditions, * * to be consigned to oblivion." And referring to tubercular diseases, and the recent much vaunted specific of Dr. Koch, he says—"A whole address might easily be devoted to a record of the different pathological views held as to tubercle and phthisis and an account of the various remedies advocated for their cure, from the specific of some obscure empiric whom we contemptuously disignate a quack up to the scientific remedy, elaborated by some leading pathologist whose discovery under most august and imperial patronage, sets the whole civilized world in a flutter of excitement until it, too, is relegated to the limbo of useless discoveries."

Dr. Carr last of all deals with two especially fashionable methods of treatment which are quite the rage at the present day, and over which members of the old school are jubilant as the latest outcome of the scientific development of medicine, namely, the use of animal extracts and the use of antitoxin. The theory is that diseases may be grouped under two heads, those in which some organ or tissue is affected so that its secretion internal or external is suppressed or altered, and those due to a micro-organism or its toxin. In the case of the former the extract of the corresponding organ or tissue of some healthy animal, and in the case of the latter, the antitoxin of the corresponding micro-organism, must be the remedies respectively. Is it the thyroid, or the liver, or any other organ that is diseased? The extract of that organ of some animal ought to prove curative, and the late Dr. Brown-Sequard was in such raptures with a particular extract that he called it the elixir of life. Again, in the case of cholera, the antitoxin of the comma bacillus must be the remedy for the disease. And so on. "How delightfully simple," observes Dr. Carr with a touch of cynicism, "will be the medicine of the future!" Yes, very simple indeed, for the materia medica would then be reduced to a few animal extracts and antitoxins. But what if in cases of disease, as is but too often the case, more than one organ, or all the most important organs, are diseased? And what of those diseases of which the specific micro-organism has not been discovered?

The above is a picture of the medical science followed and practised in the civilized countries of the West by the largest majority of the profession, as drawn by one of its own professors, and not a caricature drawn by an alien or antagonistic party. Is this the science of which the Viceroy spoke as being built upon the bed rock of pure and irrefutable science? If so, His Excellency must pardon us if we venture to say that his idea of it could not have been derived from a knowledge of the actual condition of the science itself. His Excellency must have been quite charmed by the glamour thrown round the science by the brilliant achievements of its auxilliary branches and of its mechanical or surgical parts. And no wonder that he should be so deceived when the body of the profession with the exception of the thoughtful and conscientious few are so deceived.

While we have taken the liberty thus to point out that the orthodox or official medical science proper of the West has not up to this day been built upon the bed rock of pure and irrefutable science, or rather, as we should prefer to say, has not been cultivated in the true spirit of scientific method, we must express our gratitude for the gift as it is, inasmuch as it has come associated with the auxilliary sciences which as we have said never existed in this country, without which no true science of medicine could exist, and which in themselves are of the highest value.

We cannot help remarking, however, that though our country cannot boast of having had the advantage of the preliminary sciences it had a body of therapeutics or medicine proper which, far from being inferior to the therapeutics of the old school of the West, is still for many diseases and diseased conditions far superior, and which has enabled the Kavirajs or practitioners of Hindu medicine to maintain a successful rivalry with practitioners of European medicine. At the first introduction of Western medical science supported by a precise knowledge of the structure and functions of the human body, the indigenous practitioner was looked upon as absolutely incompetent to treat diseases of which, from his profound ignorance of anatomy and physiology, he could not possibly know the true nature and diagnose the true seat. For a time he was so much at discount that it was believed that his occupation was gone, and that he would be entirely supplanted by the scientific practitioner. But the repeated and signal failures of the scientific practitioner in almost all chronic diseases, diarrhœa, dysentery, dropsy, fever, dyspepsia, &c., notwithstanding his scientific pretensions, and the success of the unscientific man in some of these cases, have brought about such a reaction in favour of the latter as to command the respect even of his scientific colleague. The reason of this turn of the tide is not far to seek. The difference between the European old school and the Hindu practitioners consists only in the former having the benefit of what we have called the auxilliary sciences, and where these are of help in treatment, the superiority of the former over the latter is undoubted. But as regards therapeutics, both are on a footing of equality having no true law of drug-selection to guide them. Hence the practice of both is purely empirical, that is, based upon knowledge derived from experience of the efficacy of particular drugs in particular diseases. The experience being much longer in the case of the Hindu, and he, being more cautious, less reckless, less forward for change, deals with remedial agents of the efficacy of which he is more assured, and is, therefore, more successful.

We have commented on *official* or State-recognized Western medical science, in the belief that Lord Curzon must have had this in view when he spoke of "our medicine" at the Dufferin meeting. As a man of vast and varied attainments, we do not think his Lordship is unacquainted with the fact that official medical science, though adopted by the largest majority of the profession, does not represent the whole medical science of the West. There is a branch of the profession in all the countries of Europe and America, which, originating in Germany just a century ago, has, though still a minority, overspead the whole world, and made special and most remarkable progress in that land of freedom, the United States, and commanded the respect of some of the greatest intellects of the age. If His Excellency had included this branch of the profession with the other, the public would have had nothing to complain of, indeed, would have hailed his pronouncement as one of judicial impartiality on a disputed subject, becoming a statesman of his stamp and calibre.

PLAGUE IN CALCUTTA; AND THE DRAINAGE OF THE CITY.

WHEN the fact was established in 1896 that the veritable Bubonic Plague, the greatest scourge of mankind ever since the dawn of history, has visited Bombay, the fear was naturally entertained that its advent in Calcutta was only a question of time. When the distance between Bombay and Calcutta can be travelled over by rail in less than two days, and when the incubation period of the disease may be so long as ten days, it can be easily seen how the chances of the spread of its contagion from the one city to the other are very high indeed. No amount of quarantine, however rigidly enforced, will be sufficient to cope with the ingenuity of people bent upon eluding it. Drs. Dyson and Calvert, in submitting their report on the Plague in Bombay, expressed the same opinion as regards quarantine. "Human intercourse," they said, "being the chief factor in the spread of the disease, it follows that with an incubation of eight days (ten days Venice Convention), no system of land quarantine can be completely effective in India with its present facilities of of rapid communication. Its establishment will no doubt lessen the danger, the more marked cases being detected; but cases in the state of early incubation will slip through, and the nearer the epidemic approaches any city or area it is desired to protect, the greater that danger becomes, and the more likely is its infection to occur. It is true the regulations might be increased in severity, but unfortunately such a measure would defeat its own object, since the more stringent and irksome the regulations are made, the greater is the ingenuity displayed in evading them. Nothing short of the suspension of the railway communication would be effective—a measure of such severity that it is doubtful if it could be carried out." It is only a wonder that Calcutta has escaped so long.

Dr. Simpson, the then Health Officer of Calcutta, believed that he had seen a few cases in October 1896, one in Howrah a recent arrival from Bombay, and three others in Calcutta itself. We had no opportunity of seeing the Howrah case, but we saw the three Calcutta cases and we agreed with Dr. Dyson in believing that these latter were not cases of plague, but were simple cases of fever with very slight enlargement of the glands. It is also worthy of note that none of these Calcutta cases could be traced to contagion from Bombay. They all recovered and did not prove foci of contagion for the spread of the disease. The bacteriological diagnosis of the cases upon which Dr. Simpson relied so much was proved to be fallacious by Dr. Cunningham, Professor of Physiology and Pathology of the Calcutta Medical College, and an eminent microscopist and bacteriologist of European reputation. Had it not been for this refutation, Calcutta would have been declared plague-infected in 1896 on the authority of Dr. Simpson and of a couple of other doctors who were of his opinion.

The year 1897 passed without any case of the disesse occurring in the city, showing that Dr. Simpson's cases were not cases of plague at all. Calcutta was startled by a rumour that a case had occurred in Kapalitola on the 16th April of last year, which had proved fatal. The *post mortem* examination showing suspicious signs, cultures were made from the important organs and sent to M. Haffkine at Bombay, who after bacteriological examination declared—"Cultivation sent from Calcutta produced typical plague involution forms. Identity with plague microbe undoubted." This was received on the 30th April and on that day, on the authority of M. Haffkine, Calcutta was officially declared plague-infected.

From the 14th or 15th April, the probable date of the first seizure to the 19th September the date of the last seizure and of the last death there were in all, as officially reported, 230 cases and 192 deaths, or about a case and half per day, and 80 per cent of deaths to cases. The last case being reported discharged cured from hospital on the 28th September, Calcutta was officially declared free from plague on the 10th October. As we have seen in our last number Calcutta has again been declared plague-infected. In the Government Resolution dated the 24th Feb. last making this declaration, it is stated that since the announcement of Oct. 1898 "dropping cases of a suspicious character have been reported from time to time, ... but these have been so few in number, so isolated, and for the most part so open to doubt that it has not been found necessary to re-impose the restrictions which were withdrawn in October." But during January 15 cases and 13 deaths, and in February up to the 23rd instant 27 cases with 24 deaths were reported. Since then cases of actual and suspected plague, as shown in the daily Municipal returns, have been increasing.

How the distiction is being made between actual and suspected cases, the Municipality alone can say. It is altogether suspicious as to whether the returns are being compiled with that regard for accuracy which is so essential for drawing scientific conclusions, especially in such a matter as the plague which not figuratively but literally vitally concerns not alone the metropolis but the whole of India. We believe that it is not every medical man, far less every lay man, who can distinguish cases of actual plague from severe cases of remittent fever of malarious origin. Till lately there was no medical man at the Burning Ghat, and not even now, as we believe, any at the burial grounds. Hence the returns from these places cannot be reliable, and certainly cannot possess any scientific value, beyond pointing to the fact of an unusually high mortality from fevers in Calcutta whatever the nature of those fevers may be.

It is a singular coincidence that the so-called plague cases are occurring, unlike what obtains in Bombay and elsewhere, in the hot season when from scarcity of water the flushing of the sewers is at its minimum, and, from this cause as well as from the high temperature of the season, there is increased generation of the sewer gases. This circumstance leads to the suspicion that the Calcutta plague, or as we should prefer to call it the virulent remittent fever with typhoid or typhous symptoms which has begun to prevail lately, has its origin in the malarious condition of the city which is daily increasing in intensity from imperfect and faulty drainage aggravated by the ever increasing production of poisonous gases in the unflushed and badly flushed drains. That such a state of things was anticipated by some of the highest sanitary authorities at the time when the underground drainage scheme was launched into existence, will be seen from the discussions that took place about it in the meetings of the then Justices, and from articles that appeared in medical journals in 1867 and 1868. We give below almost entire the article that we ourselves wrote on the subject in this Journal in June 1868. In view of the great danger that is threatening the city and of which we are already getting timely warnings, we cannot too emphatically urge upon the authorities to lose no time in remedying the grave defects that are daily becoming more and more serious of our undergound drains.

THE DRAINAGE OF CALCUTTA. (*Cal. Journ. Med.*, June 1868.)

Calcutta, the boasted metropolis of British India, the so-called City of Palaces, is, as every one knows, built on a pestilential swamp, and has on its south-east, whence the wind blows for upwards of half the year, the extension of the same swamp as far as the sea. The home of a most dense population with all the baneful appurtenances of civilization, the theatre of a most busy commerce, it is certainly a tough problem for engineering and medical talent to solve, how to correct the natural unhealthiness of such a city, and preserve it when corrected. The question has been engaging the attention of government and of earnest members of the community for a long time past, and this attention or rather inattention, has resulted in a scheme which is now the subject of the hottest debate. We would keep silent still, if only we could avoid the imputation of giving tacit consent to a measure which we at heart condemn.

Sanitation of cities resolves itself into the disposal of refuse and excrementitious matters and of superfluous water. Now this disposal should be effected with such care as not to be prejudicial to either the neighbourhood or to future generations of the locality itself. In other words, the filth should not only be removed but deprived of its health-destroying properties. The grand agents by which nature accomplishes this object are the currents of the atmosphere and of rivers for the removal, and the oxygen of the air and the solar heat for the destruction, of the deleterious properties of the waste products of living. These agents serve for general purposes, but it would be too idle and even mischievous to trust to them for local purposes. The filth in cities accumulates so fast and in such enormously large quantities, that the atmosphere and the rivers (if any close by) must be relieved of their sanitary duties in order to preserve them from too serious contamination. This can only be done by either utilization of the excrementitious matters, or by the artificial destruction of their injurious properties by chemical means, or by both combined.

As far as yet known the only way in which excrementitious products can be utilized is in making use of them as manure for agricultural purposes. The limits to this are prescribed by the quantity of the refuse matters and the distance to which they must be carried to meet the requirements of agriculture. The quantity may be too large to be thus disposed of, and the distance too long to be economical. In this case we can only meet the difficulty by the disinfecting agency of chemistry.

With reference to the sanitation of Calcutta, it is necessary to determine—1. Where can its filth be removed without directly or indirectly interfering with the health of its environs, or of itself immediately or remotely? 2. How can this be utilized for agricultural purposes? 3. Ought the filth and the superfluous water to be disposed of by the same agency, in other words, ought the sewage and the drainage to be combined in one scheme? Having determined these questions, it will be necessary to ascertain if the financial resources of the municipality are capable of meeting the requirements of sanitary science. For it must be remembered that all projects must necessarily be chimerical, unless backed by a healthy state of the finance. Taxation has its limits, on exceeding which it proves as much a nuisance as the accumulation of filth itself.

Let us examine the problem apart from its financial bearing. Situated as Calcutta is, the only way of disposing of its refuse matters is by either throwing them into the Hooghly as is now being done, or carrying them to the Salt-Water Lake, the scheme proposed and the result of which is the construction of subterranean drains. To pollute the waters of the Hooghly with the sewage of a populous city like Calcutta, is the most insanitary measure that can be conceived, not only from the fact of the water becoming thereby unfit for drinking and even washing purposes, but also from the fact, only recently noticed, that the banks become coated with a thick layer of the dissolved sewage and are thus rendered perpetual sources of the most virulent putrefactive miasmata. The Hooghly therefore must be absolved from the duty of being the receptacle of the sewage of Calcutta. The only quarter that now remains for us to look to where to dispose of the filth, is the Salt-Water Lake. If we remember that the wind blows from this quarter towards Calcutta during some of the most unhealthy months of the year, it will be evident that the Salt-Water Lake ought not to be made the simple receptacle of our filth. There it must be so converted as to be innocuous, in other words, utilized in some way or other, or chemically deprived of its deleterious qualities. Hence all the schemes of clearing Calcutta of its refuse matters must necessarily be associated with the reclamation of this extensive marsh. For unless this latter can be effected, any scheme must needs be a gigantic failure fraught with the most baneful consequences not only to the environs of Calcutta but to Calcutta itself.

Admitting that the filth of Calcutta is to be conveyed to the Salt-Water Lake as the only place where it can be disposed of, the question of the greatest importance to be determined is, if the solid matters are to be mixed up with the liquid and if the mixture is to be conveyed away together with the excess of rain-fall; in other words, are the sewage and drainage to be combined in one scheme. It is a fact which must have come under any one's observation that the addition of water to putrefying or putrescible organic matter, aided by a certain temperature, greatly favors the putrefaction of that matter. The superfluous rain-fall which by itself would be perfectly harmless, if allowed to mix with the ordure, &c., by so much would increase the volume of putrefying and therefore disease-generating matter, and thus add not only fuel to fire but impart incalculable combustible fury to that fire. This would especially be the case if the putrefying matter be removed, which they would be, in covered drains, from the oxygen of the atmosphere. Nature in her higher organisations has separated the liquid from the solid excremetitious products, as if by her example to teach us, never to commit the fatal mistake of mixing sewage with drainge.

Supposing therefore that the drains as now constructed would be perfect as far as engineering skill goes, that they will not sink nor silt up, that the pumps would be quite equal to the task imposed upon them, how are we to prevent the putrefaction of their contents? and though we may succeed in disposing of them, how are we to dispose of the gases that will inevitably result from their decomposition? Mr. Leonard, Consulting Engineer to the Justices, speaks of ventillators in connection with the drains. We must confess to our in ability to understand exactly what he means. But whatever they might be and however constructed, if they are to serve as apparatus for the disposal of the gases, that will result from the putrefactive changes in the contents of the subterranean drains, into the atmosphere, "high above the roofs of houses," it is impossible to imagine a more certain and a more formidable set of disease-generating and life-killing engines than these. The gases, which will thus be disposed of, will not and can never be, as Mr. Leonard thinks, "harmless." We medical men are often charged with ignorance as to the engineering skill by which air and smell can be thoroughly shut off. But on our part we can hardly point to a more ridiculous ignorance of the commonest physical laws than that which would remove heavy offensive gases from the lowest stratum of the atmosphere to be disposed of in strata higher than the roofs of our houses, where it is fancied they would be innocuous. These gases will rather obey their own unalterable laws than the capricious will of our engineers. They will not and cannot float up and away higher and higher into the atmosphere till they be robbed of their disease-generating properties. They must sink by virtue of their higher specific gravity, and thus render the whole habitable portion of the atmosphere pestiferous. So that even two-storied houses, which now enjoy considerable immunities from the poisonous influence of the miasmatic exhalations of the open drains, will thereby lose their present comparative safety. We may remark in passing that this, in a medical point of view, forms a most serious objection to the mode of cremation of the dead proposed to be adopted.

Even if these ventillators be dispensed with, Calcutta can never be free from the gaseous emanations of the subterranean sewers. They must be daily opened at innumerable points for the purpose of pouring into them the excrementitious products of the town, and of cleaning them whenever necessary; and from these openings pent-up gases must necessarily issue and pollute the atmosphere. But this is not all. Mr. Leonard, to quiet "the feeling afloat that the drains which are being built and the pumping power which is being provided at the out-fall, may not be able to carry off and dispose of heavy rain-fall," assures us, "that if the precautions mentioned by *the committee be carried out, no disaster would ensue even if the mains should be found unable to carry off all the water* during an unusually heavy rain-fall, the committee provide trapped openings in the crowns of the mains, so that if from overfilling a pressure come on the under side of the sewer arch the trap would open and the water flow off down the street, thus preventing damage to the sewer." We are ready to believe this ingenious device will effectively prevent damage to the sewer. But let the good citizens realize to their minds the pleasant state of things that will ensue under the circumstances. It is not the water alone that would flow off down the streets; it will take along with it the contents of the drains, and the passengers will then not only be regaled by the delicious perfumes exhaled, but they shall have the luxury as well of wading through filth and mire.

We are then decidedly of the opinion of Dr. Mouat "that the future sanitary state of Calcutta will be worse than its present hygienic condition, if the products of putrefactive fermentation, daily of two hundred tons of excrementitious matters are permitted to poison the air of the town in a concentrated form, at a time when the condition of the atmosphere, from more general causes, is in the state most favorable for the production of disease." We have therefore no hesitation to assert with him, with all the emphasis in our power that "it would be better even to let it reek and rot in the sun, and to let the air of heaven carry it off in a diluted state, as it does at present, than to run any such risk."

We have pointed out above a few only of the most obvious defects in the drainage scheme of Calcutta. A small fraction of this scheme has been executed at an enormous expenditure, and it has been determined to finish it at a vastly greater expense still. This the municipality have resolved upon doing in spite of the remonstrance of some of its own body who are authorities in sanitary matters, and in spite of the remonstance and earnest prayer too of the greatly preponderating majority of the rate-prayers of the city. We do not stop to inquire if such a procedure on the part of the appointed guardians of the public health and property, is not simple reeklessness, and inconsistent with the solemn promise made, before the scheme was begun to be put in practice, that only a small portion would be constructed and allowed thorough trial before the whole town would be hollowed out by deep cavernous channels, and the inhabitants subjected to an expenditure that might not know any limits. We think it useless to waste time in idle remarks on these points, especially when we find that the conscience of corporate bodies is altogether different a thing from, and has the power of misleading, the consciences of individuals. It is impossible otherwise to explain the motive which could lead Dr. Chevers to vote for the extension of the drainage works to the Northern Division of the town. Dr. Chevers is our highest authority in sanitary questions, and though he was surprised at the summary disposal by Mr. Leonard of the medical objection which should have been thoroughly weighed and considered, and though he regarded the plan of carrying 200 tons of excrementitious matter through deep cavernous channels, and then pumped into a stagnant salt marsh as utterly inefficient, and prejudicial to health, nevertheless, on the principle of something better than nothing, he, in the same breath, voted for the completion of the works which he himself thus emphatically condemns. It is not in our nature to be uncharitable, and we are strongly inclined to believe Dr. Chevers must have been moved to this stange inconsistency in utter disgust and hopelessness.

There is altogether such an amount of vagueness in the scheme of the Justices as might be well characterized as amusing, were it not for the sad consequences which it is calculated to bring upon the inhabitants of Calcutta. The scheme does not tell us as to how those parts of the town, where even pipe drains cannot be laid, are to be drained. There is provision for flushing the main sewers, but none that we can imagine by which the pipe drains can be flushed. It is easy to see that without an efficient flushing apparatus for these there would be serious and frequent obstructions in them. It will not do to clean the mains, the branches which intersect the streets and would open under our very noses, must be looked after most closely. As to the disposal of the whole of the contents of the drains, it is to be "pumped up (at the out-fall) about 14 feet, past into another covered drain which conveys it into one of the channels of the Salt-Lake, and there it was *supposed* to be sufficiently disposed of to relieve Calcutta."

The fact is, we need not go beyond the report of Mr. Leonard to find enough to condemn the whole scheme. "The portion of the scheme," says he, "which I have really fears about, is that which concerns the matter after it is *supposed* to be disposed of in the Salt-Lake Channel. I have always said that *this disposal will not do, the matter will not float away, it will be a nuisance to the canals* and I belived even to Calcutta itself." But how does Mr. Leonard get over this difficulty? "Hence I was extremely glad," he continues, "to hear of the formation of the Salt Water Lake Reclamation Company, for utilizing the drainage matter, and I am now very glad to hear that it is about to be revived; the Justices should, I am satisfied, give it every encouragement which may be in their power to give, for my decided opinion is, that if a company does not dispose of the night soil in the way proposed, the Justices must do so. It will not do to drop it into the Salt Lake channel and there allow it to float about a nuisance to thousands." In this repect we must confess that the Engineer is far ahead of his medical colleague, who seems to laugh at the *"general apprehension that the deposit of the sewage of Calcutta in the neighbourhood of the Salt Water Lake so close to the city, will prove injurious to the health of the residents, or otherwise that if discharged into the Canal it will sooner or later become obnoxious from the accumulations which the tidal streams will fail to remove."* Dr. Macrae cannot believe that this disposal of the sewage will ever be obnoxious to Calcutta. He would have us believe that the liquid sewage, if allowed to flow over the land, will be readily absorbed and deodorized so as to be innocuous. If so, why then take the trouble and undergo the expenditure of removing them out of Calcutta? Why not allow them to flow over our streets at dead of night, inasmuch as in the morning we can expect to find them all absorbed, deodorized, and rendered innocuous?

Having thus exposed the serious defects in the scheme for cleaning Calcutta, we might think our business done. But Mr. Justice Hobhouse might angrily demand of us the suggestion of a better one. Well, we might leave this for further consideration by those who are under obligations to do it a thousand times over, when they are paid for the work, and when they succeed only in bringing out abortive plans. But as it appears that there is a fatality in all that they do, we would simply suggest that the sewage and the drainage should always be kept separate; that the excrementitious products should first be disinfected, to imitate Nature's example, and then conveyed away by cartage and that the superfluous water should be disposed of by open drains; that the drains already existing should be improved, and care taken that no solid excrementitious matters are thrown into them. All this can be done at a considerably less expense than what would be required to complete the present drainage works. Dr. Macrae objects to the conveyance of filth by carts as exceedingly expensive. We do not see how this can ever exceed the estimated cost of the underground drains. We believe it will be infinitely less. We see that already a municipal railway has been constructed at an enormous expense. To what purposes would it be applied when the drainage works are completed? Why waste such a large amount of public money in making a thing which will have to be unmade soon, which is to serve only a temporary, if any, purpose at all, and when that purpose is being served at a much less expense? The municipal taxes, it should be remembered, represent the life-blood of thousands who barely earn their daily bread in the sweat of their brow, and thus pass a most wretched existence. It is a libel against justice and humanity to lavish money gathered from such sources in uncertain, if not mischievous, projects.

EDITOR'S NOTES.

Meat in Lithemia and Gout.

In summing up an article on this topic, in the Philadelphia Polyclinic, Oct. 1, 1898, Dr. Charles Baum declares that "apparently restored health and a feeling of comfort and happiness with willingness and ability to work will come to patients with lithemia and with gout, if they will omit meat from the diet and subsist upon milk with suitable vegetables and fruits. The secret of success is to lighten the labors of weakened eliminating organs."—*Medical Times*, Feb. 1899.

Experimental Quinine Amblyopia.

Holden (*Archives of Ophthalmology*, November, 1898) has studied the pathological changes produced by injecting quinine hypodermically in dogs. Although the arteries were constricted no histological changes were noticed in the vessels of the nerve or retina, there being neither thickening of the vessel walls nor proliferation of the endothelium. The pathological process consists in a constriction of the retinal vessels, and particularly of the arteries, followed by a highly albuminous serous exudation into the nerve fibre layer, and a degeneration of the ganglion cells, together with their axis-cylinder processes, which become the centripetal fibres of the optic nerve. These changes were not prevented by the exhibition of nitrate of sodium.—*Brit. Med. Journ.*, Feb. 25, 1899.

Action of Bacteria on the Photographic Plate.

Percy Frankland (*Centralbl. f. Bakt.*, xxiv, No. 17) finds that ordinary dish cultures on gelatine or agar-agar—and more especially "streak cultures"—have a distinct action upon the photographic film, even at the distance of half an inch; and that when placed in immediate contact with the film in the dark, definite pictures of the growths may be obtained. This influence, probably due to the evolution of chemical volatile substances, cannot pass through glass; in the case of phosphorescent organisms, however, a distinct action through glass is noticeable. The writer thinks that this action of bacteria on the photographic film may vary in different species, and may thus become of importance in diagnosis. It remains to be seen whether other organised structures, vegetable or animal, can exert a similar influence.—*Brit. Med. Jour.*, Feb. 25, 1899.

Renal Disease of Malarial Origin.

Rem-Picci (*Il Policlinico*, May 1st, 1898) says that malaria may give rise not only to simple albuminuria, but also to definite renal lesions. Kidney mischief of malarial origin is not common, and when it occurs is generally to be seen in the spring or autumn of the year, and preferably in young subjects; the severity or mildness of the malarial attack has no influence on the development of the kidney mischief. Usually the kidney trouble is slight, and accompanied by very few symptoms; the nephritis is usually catarrhal, desquamative, or tubular, and in the majority of cases gets better without leaving any trace behind it, but may leave permanent mischief. The type is rather like that met with in scarlet fever. There is also a form which occurs after the malarial fever has disappeared. In rare cases one may have an acute anasarca of malarial origin, without any coexisting albuminuria.—*Brit. Med. Journ.*, Feb. 18, 1899.

The London County Council and Cremation.

We understand that some of the friends of cremation on the London County Council have under consideration a scheme which, if carried out, will provide London with a place for cremation at once accessible and well situated having regard to its purposes. In the early part of last year the Council passed the following resolution:

> That the Parliamentary Committee be asked to take measures with the view of obtaining power for local authorities under the Metropolitan Burials Act to provide for cremation.

Upon this the Committee prepared and the Council approved a Bill, entitled, the Metropolitan Burial Boards (Cremation) Bill, but, owing to the pressure in Parliament of other business, no progress was made with the measure during the session of 1898. Fearing the same fate during the present session, the Parliamentary Committee reported to the Council at the meeting last week that the Bill be not further proceeded with. Thanks, however, to the vigilance of Sir Arthur Arnold and the wide feeling of approval of the purposes of the Bill which appears to exist in the Council, the report was referred back *nem. con.*—*Brit. Med. Journ.*, Feb. 18, 1899.

Rupture of Uterus during Removal of the Placenta.

Dietel (*Centralbl. f. Gynäk.*, April 16th, 1898) was called to a case in which a midwife, and later two medical men, had been engaged in trying to extract the placenta. The labour had quickly and spontaneously ended in the birth of a premature child. First by Credé's method, and later by manual means under anæsthesia, parts of the placenta were removed. Then bleeding set in, and the patient was sent into hospital. A rupture was found in the uterus near the sacral promontory. The abdomen was opened and much blood was found in the cavity. There was a large tear in the right broad ligament. The small intestine was in part torn away from its mesentery and ruptured. Bleeding points were ligatured, and the intestinal laceration closed by Murphy's button; transfusion with saline solution was performed, but the patient sank some hours after the operation. At the necropsy it became evident that during attempts at the removal of the placenta a way had been forced through the uterine wall and right broad ligament into the peritoneal cavity. Evidently the Fallopian tube and mesentery had been mistaken for the cord and placenta. A great part of the placenta was still in the uterine fundus. —*Brit. Med. Journ.* Feb. 18, 1899.

Double Congenital Diaphragmatic Hernia.

Hints (*Centralbl. f. Gynäk.*, No. 15, April 16th, 1898) exhibited before the Obstetrical Society of Leipzig an infant with double congenital diaphragmatic hernia. It was from a case of labour in a 30 year old 9-para whose other children had been normal. The fœtal heart was clearly heard during pregnancy, and the confinement was natural. The newborn infant seemed normal, but with the cessation of pulsation in the umbilical cord became cyanotic in appearance. Various measures for resuscitation were tried, during the performance of which it was noted that the apex beat was on the right side of the chest. It was believed that the asphyxia was due to pressure upon the lungs from a diaphragmatic hernia, for all other possible causes could be excluded. The necropsy demonstrated the correctness of the diagnosis. The heart was on the right side of the throax, both lungs were small, much compressed, and contained no air. The whole of the left side of the throax was occupied by abdominal organs, including stomach, duodenum, small intestine, left lobe of liver, spleen, and the upper end of the left kidney. There was also a smaller right sided diaphragmatic hernia through which the right hepatic lobe, the transverse colon, some small intestines, and the upper end of the right kidney projected into the thoracic cavity—*Brit. Med. Journ.*, Feb. 18.

Plague in China.

In the "Encyclopædia Britannica" (ninth edition, vol. xix. p. 168), Dr. J. F. Payne writes: "It is remarkable that of late years reports have come of the occurrence of Oriental plague in China. It has been observed in the province of Yunnan since 1871 . . . it appears to be endemic, though there are rumours of its having been brought from Burmah, and become more noticeable after the suppression of rebellion in that province [1872]." However, the following passage I have lately found in Hung Liang-Kih's "Peh-Kiang-Shi-Hwa" British Musuem copy, 15, 316, *a*, tom. iv., fol. 4, *b*), bears witness to the much earlier occurrence of the pest in Yunnan, inasmuch as the author, who was born in 1736, and died in 1809, speaks of his contemporary dead thereby:—"Shi Tau-Nan, the son of Shi Fan, now the Governor of Wang-Kiang, was notorious for his [poetic] gift, and was only thirty-six years old when he died. . . . Then, in Chau-Chau [in Yunnan] it happened that in daytime strange rats appeared in the houses, and lying down on the ground, perished with blood-spitting. There was not a man who escaped the instantaneous death after being infected with the miasma. Tau-Nan composed thereon a poem, entitled "Death of Rats," the masterpiece of his; and a few days after, he himself died from this '*queer rat epidemic.*'"

KUMAGUSU MINAKATA in *Nature*, Feb. 16, 1899.

Longevity in Lunatics.

There died recently at Broadmoor State Asylum a lunatic whose history furnishes an interesting comment on the above subject and has bearings on the economic question of the housing, care and treatment (and incidentally the expense which must of necessity accrue therefrom), and longevity of certain lunatics. John Quier attempted to murder and was sent to gaol in 1843 at the age of 29 years. He was then found to be insane and was sent to Bedlam where he was detained until 1864—a period of 21 years. Broadmoor Asylum being then opened he was transferred there and remained an inmate until his death in 1899. During his long confinement of 55 years Quier, it is said, showed no tendency to violence. He was a quiet, inoffensive, weak-minded man, generally engaged in doing odd jobs. He died at the age of 84 years, the cause of death being given as senile decay. In a recent work Dr. Blandford mentions the following facts on longevity :—"In a small asylum for the upper classes I have under my care at the present time (December, 1896) 24 female patients. Of these four are upwards of 80 years of age; one has been an inmate of the asylum 52 years, one 49 years. Three are upwards of 70 years and they have been patients in the same house 50, 45, and 44 years." The records of other county and private asylums, especially the older ones, contain several similar cases of longevity. The economic and financial data, if available, ought to prove highly interesting.—*Lancet*, Feb. 18, 1899.

Liquid Hydrogen.

On Jan. 20th Professor Dewar gave a lecture at the Royal Institution upon liquid hydrogen. In the course of his opening remarks he said that he hoped to be able to exhibit some liquid hydrogen in the course of the evening but that he doubted whether he should, for some 10,000 things might happen to prevent it. Pressure and cold were the two agents employed in liquefying hydrogen. The first gas to yield was chlorine, which was obtained as a liquid by Faraday and the pioneers in the reduction of the more refractory gases were Andrews, Graham, Pictet and Cailletet, and Olszewski. At this point of his discourse Professor Dewar received a message from the laboratory. He then remarked, "Just what I expected, the tap through which the liquid hydrogen was running is blocked by a lump of frozen air." This to an audience largely composed of persons other than purely scientific men and women might have been considered somewhat startling, but owing, we suppose, to the genius loci, nobody exhibited more surprise than if Professor Dewar had remarked that an ordinary water-tap was frozen. Proceeding with the account of hydrogen Professor Dewar said that its boiling point was — 240° C., or about 30 degrees of absolute temperature. Its chief use at present was to make high vacuum tubes which it did almost instantaneously by condensing the air into a liquid. With regard to its properties it exibited a wellmarked meniscus, capillarity, no appearance of a metal, and would not conduct electricity. Professor Dewar concluded by expressing a hope that at a future lecture he would be more fortunate and would be able to show some of this newest liquid.—*Lancet*, Feb. 4, 1899.

Milk Diet for Articular Rheumatism.

The tortures endured by patients suffering from articular rheumatism are in themselves alone of a violence and tenacity sufficient to induce the physician to endeavor to oppose to this disease a treatment uniting the three qualities, *cito, tute, et jucunde.* The milk diet seems capable of fulfilling this desideratum. The therapeutical views of M. Bigot on the subject, as given in the "Revue Mensuelle de Medecine et de Chirurgie (Diet. and Hyg. Gaz.) may be thus summarized:

The milk causes the temperature to fall rapidly below hyperpyrexia, and simultaneously assuages the pains in a period varying from three to eight days. The effects from these two points of view are more prompt and more powerful if the patient be submitted to the milk regimen at the outset of the affection. This milk regimen, without overcharging the stomach or raising the temperature, by its nutritive power and its facility of digestion, prevents in a great measure that characteristic and generally troublesome anemia left behind by attacks of rheumatism. Besides these general effects, milk diet has a special action on the urinary function, which is clearly indicated in rheumatism. Milk strongly favors the elimination of all the waste principles accumulated in the organism; its exclusive use causes both the quantity of urine excreted in twenty-four hours and the quantity of all the saline principles dissolved in this liquid to increase rapidly. Density, on the contrary, experiences a proportionate decrease. The impetus given to the urinary function by a milk regimen allows a glimpse of the nature of rheumatism, its near and intimate causes. The analysis of urine seems to show that there is an accumulation of urates or uric acid in the organism of rheumatic sufferers, and that its diminution under the influence of milk is not one of the smallest benefits of this regimen.—*Medical Times,* Feb.'99.

A Menstruating Man: A Curious Form of Hermaphroditism.

A. B., aged 24, kept company with a young woman for twelve months, during which time he offered to kiss her once, and on no other occasion showed any sexual feeling whatever. Just a week after marrying her, and again two months subsequently, he made very feeble attempts at copulation, having apparently neither sexual instinct nor power of erection; neither penetration nor emission occurred. He was then away from home for four months, and on his return he made no offer of sexual intercourse during the few days he remained at home before going away again for two months. On the first night after returning this second time his wife did her best to stimulate him, but it was quite hopeless, as he could effect nothing. As they had both noticed that he had periodical red monthly discharges, usually lasting about three days, and staining his shirts and sheets, they began to note the dates on which this began, and ticked off the following days: April 24th, May 22nd, June 19th, July 21st, August 14th, September 10th, October 9th, November 1st. Having got so far, they thought it time to consult me as to whether he was a man, or a woman, or both, or neither.

I found nothing unusual in his general appearance, except a shy, cowed look; the penis, urinary meatus, and scrotum seemed normal, but the testes felt decidedly small and soft; he stated that he had never either abused himself or had any sexual feeling whatever. Being satisfied that he was at least not a complete man, and doubtless cowed by his wife's dissatisfaction, he readily consented to a separation and allowed her half his income.

It seems likely that this case differs from Ströbe's case of hermaphroditism—fully described in the EPITOME of the British Medical Journal of November 12th, 1898, page 79—merely in the fact that the rudimentary testes had descended into the scrotum, the man probably having a uterus and Fallopian tubes.—*Brit. Med. Jour.*, Feb. 4.

The Effects of Mixed Diets on Salivary Digestion.

At a meeting of the Edinburgh Royal Society, July 4, 1898, Dr. W. Aitchison Robertson read a paper on the above subject. The research was made with the object of determining whether the digestion of starch was affected favorably or unfavorably by its admixture with other articles of food. He found that porridge formed a fairly easily digestible article of food, and that the greater the dilution of the porridge with water or milk the greater was its ease of digestion. In fact, well-made water-gruel was one of the most easily digested of foods. The reason why potatoes were so often badly borne by the stomach was probably due to the manner in which they were prepared. If after being boiled, they were finely powdered, so that the saliva could gain ready access to the starch granules, they were easily and rapidly digested. On the other hand, when sent to the table whole, the probability was that they would be imperfectly masticated and swallowed in fragments of greater or less size. In such a case the saliva could only act on the outer surfaces of the fragments, and the result was a very imperfect digestion. In respect of the digestion of bread, the experiments showed that it was much less acted upon by saliva when eaten alone than when taken along with some indifferent fluid as water. Newly baked bread was not as rapidly acted upon by saliva as stale bread, but the ultimate degree of starch conversion was greater in the former than in the latter. So far as the experiments showed, stale bread was not more easily digested than newly baked bread. The addition of milk to bread caused a remarkable enfeeblement of the salivary element, while broth exerted a slight restraining influence upon it. Alcohol, even in solution, retarded salivary digestion of starch, but the action was much less marked than in the case of the infusion of tea. Wines had a very marked inhibitory influence on the digestion of starch by saliva, and that was almost wholly due to their acidity. Even after three hours' digestion in the presence of sherry, port or claret, the starch had undergone hardly any conversion. —*Medical Times*, Feb. 1809.

Sanitation and the Death-rate.

We quote the following extract from the report of the Chicago

Department of Health for 1898. From a scientific point of view such comparisons are useful, but they also serve the important object of educating the public in the results of medical science as applied to public health.

"During the Victorian jubilee, 1897, one of the addresses presented was on the subject of sanitary improvements during the preceding 60 years and their effect on the saving of life. The speaker—the Lord Mayor of London—cited Macaulay's comparison between the London mortality of 1844 and that of 1684 which showed that the death-rate of the latter year, 'not a sickly one,' was between 43 and 44 per 1000, or one in every 23. He then went on to show that in 1897 the London death-rate was 14·9 per 1000, despite the enormous increase in the population. During the 10 years from 1838 to 1847 the mean annual death-rate for England and Wales was 22·16 per 1000, while that of the 10 years from 1881 to 1890 was 19·1 per 1000. 'This implies that 77,000 out of an estimated population of 29,000,000 were kept alive in each year of the latter period who would have died in each year of the former,' and this saving of life is attributed to sanitary improvements during the period. Here in Chicago there may be shown a still more remarkable saving of life. Thus during the decade 1845-54 the annual death-rate was 43·3 per 1000; during the decade just closed (1889-98) the annual death-rate has been 16·3 per 1000, and during last five years of this decade the death-rate has been 14·4 per 1000, or a fraction less than the London death-rate of 1897. This implies that upwards of 46,500 out of an average annual population of 1,611,235 were kept alive in each year of the last five years who would have died in each year of the period between 1845 and 1854. These figures are further sustained by a study of the ages at death of 10,208 who died in 1872 (the records prior to 1872 were destroyed in the Great Fire), of 12,141 who died in 1882, of 27,259 who died in 1892, and of 11,655 who died during the first six months of 1898. The average age at death in 1872 was 15 years and two months; in 1882 it was 19 years and six months; in 1892 it was 23 years and four months; and for the first six months of 1898 it was 29 years and seven months. This implies an increasing duration of life in Chicago of nearly 50 per cent. during the last quarter of a century."—*Lancet*, Feb. 25, 1899.

The Administration of Chloroform to Horses.

Mr. Karslake Tasker, writing in the *Veterinary Record*, relates his experience in giving chloroform to horses. He employs Krohne's apparatus which is based on the Junker method of forcing air through chloroform. The teaching of Dr. John Snow that chloroform acts directly in proportion to the strength of the vapour inhaled at each inspiration, affecting the centres of life in a varying order according as the vapour is presented in a weak or a concentrated state, is capable of being carried out by this plan. For while Snow worked with known quantities of chloroform in a known cubic space and so was able to give a definite percentage of the anæsthetic, by the Junker method a known quantity of chloroform is evaporated at each compression of the bellows, and so a definite amount of the chloroform is presented to the patient at each inspiration. This method has been adapted by Mr. Krohne to his very ingenious apparatus for chloroforming horses. Mr. Tasker records that he was enabled to obtain satisfactory anæsthesia in horses by using 12·93 minims per minute in one case, 12·63 minims in another, and 15·1 minims in another. This gives an average of about half a minim per respiration. The piston which takes the place of the bellows in the apparatus of Junker enables the administrator to control the percentage of vapour given. To insure success it is urged that the following rules should be attended to: (1) that the vapour be given during the whole of the period of inspiration ; (2) only so much chloroform to be given at each inspiration as can be completely absorbed ; (3) to commence with only one-twentieth of a minim, slowly and carefully to increase to one-tenth, one-fifth, &c., and never to go above half-minim doses. There is no doubt that the giving of chloroform by a method of known and accurately graduated doses is one which gives the administrator greater control than the older and more haphazard plans. It must be open to question however, at present whether the optimistic views of the supporters of this method that it removes all the dangers of the anæsthetic can be accepted without some reservation. We fear that much unnecessary suffering to animals has in the past been allowed through the dread of incurring the supposed risk of giving chloroform to valuable horses, dogs, &c. As has been pointed out by Mr. Hobday and others, the lower animals can be most successfully given chloroform if they are properly dealt with, if a rational method is adopted, and if the management of the anæsthetic is committed to a trained person and not entrusted to a stable helper or a rustic, who is as incapable of giving chloroform to a horse as to a human being.—*Lancet*, Feb. 18, 1899.

Liquid Air.

As the possible uses of liquid air are becoming better understood it is obvious that it need be no longer regarded as a mere curiousity of science but as a direct aid in the treatment of the sick. A quantity of it placed in a ventilator will furnish pure air in the sick-room. In all cases where a low temperature is required, liquid air will cool the room to almost any required degree, even in hot climates, and there are many other ways in which it may be advantageously employed.

Liquid air needs careful handling, as was shown in the laboratory of Columbia University, where Professor Tripler was experimenting before a large class of students. A pail of liquid air was spilled and all in the room were nearly frozen before the doors and windows could be opened to let in the *warm* air (32° F.) from outside.—*North Am. Jour. Hom., Feb.* 1898.

CLINICAL RECORD.

Indian.

A Hopeless Case of Remittent Fever Treated with large Doses of Quinine : Recovery.

By R. K. Tanden, M.B., C.M. Edin. Lucknow.

B. R., a Hospital Assistant of——Dispensary, B...r, æt 34. took ill on the Ist of August 1895. His illness began with a rigor culminating in a high fever which, from the very onset, assumed a remittent type.

It remitted every morning, but the temperature always went up to 104 F. in the afternoon. The other symptoms were furred tongue, loss of appetite, thirst, constipation, &c., that is those met with in any feverish condition. We began to treat him with an ordinary saline mixture every three hours, with 5 grains of quinine sulphate early in the morning. But this gave him no relief, and after a week he was just as bad as ever. The morning dose of quinine was now increased to ten grains, and the saline mixture was continued as before. His bowels now began to move regularly, but his temperature remained as high as ever. In fact it used to go up still higher, *viz.* 104·6 F. There were, however, no cerebral or other unfavourable symptoms; the patient had certainly become very weak, and we began giving him half an ounce of brandy every six hours in addition to the mixture.

I was always for giving a large dose of quinine, but my assistants always prevented me from doing so, for they said that it would simply kill him. We also sometimes gave him phenacetin in 5-grain doses, but without any permanent effect. From the 15th of August his condition became worse still. He began to ramble at times, pick at his bed clothes, and at other times became delirious. The afternoon temperature now went up to 105·4 F. The pulse was markedly dicrotic and 120 per minute, but the heart stood out well. The tongue was dry with brownish fur, there were sordes on the teeth. The lungs were congested at the base. The urine was scanty of a high color, with plenty of urates and a little albumen—*coma vigil* was also a marked symptom at this time. On the 16th day the patient was very much in the same condition and all hopes for his recovery were lost.

On the morning of the 17th August I told his friends and relations that the only chance lay in a large dose of quinine, and at last with much reluctance they acceded to my wish. I took the patient's temperature and found that it was 104 F. My first procedure was to give him an ounce of brandy. This steadied his pulse; after this I gave him 3 grs. of phenacetin every half hour: and two doses of this brought the temperature down to 102 F. At this stage I gave him 30 grs. of quinine sulphate suspended in syr. limonis, and within an hour and a half the temperature came down to 99 F. I gave him another ounce of brandy, and one hour after that another dose of 20 grs. of quinine sulphate with syr. limonis. In the afternoon his temperature was 99·4 F. He felt very much better. All the delirium was gone. He could now recognise his friends, although he was still too weak to speak to them. Towards evening he fell into a profound sleep, from which he awoke at 10 P. M.- when another dose of quinine sulph, 20 grs., was administered. Thus the patient took 70 grs. of quinine sulphate during one day. From the 18th of August he became convalescent, and on the 30th resumed his work at the Dispensary. The only disagreeable effect of quinine was that he complained of deafness for about 20 days. But beyond this he complained of nothing else.

This was the first case of its kind in which I administered quinine in such large doses. But since then I have treated some other cases of a similar nature with large doses of quinine always with a happy result, with only this change, that instead of giving it with syr. limonis, I give it in an effervescing draught.

Quinine in large doses is much dreaded in India, not only by the laity, but also by most of the medical men, especially those of the old school. You never find them prescribing this drug in larger than 10-gr. doses, and perhaps this serves their purpose in the majority of instances. But there are cases in which this drug is indicated in, what my friends of the old school would call, "heroic doses; that is to say, 20 grs. or even 30 grs. in one dose. It is because the drug is not exhibited in sufficient quantity that some cases of a severe type of remittent fever are lost.

The opinion of the medical men of India seems to be divided on this point. There are some who, like myself, believe in large doses of quinine. On the other hand, there are others who can never go beyond 10 grs. In other words it is still a controversial point, and I have reported this case simply with the object that the *Record* may invite all men to detail their experience of this drug in its columns, in order that some decision may be arrived at after due discussion.—*Indian Medical Record*, March 1, 1899.

Foreign.

Cases of Fracture of the Skull.

UNDER PROF. HELMUTH.

CASE I. M. V. F., a contractor, fell down a flight of stairs on the morning of November 20th. When brought to the hospital he was unconscious, bleeding from left ear and nose, pupils unequal, respiration bad. Locally, a contusion just below the left parietal eminence.

The head was shaved, scrubbed with green soap and a bichloride of mercury 1-2000 compress applied. Patient taken to operating-room where, without an anæsthetic, two flaps of scalp were turned down, the second exposing a linear fracture extending across the posterior inferior angle of the left parietal bone to the posterior extremity of the posterior root of the zygomatic process. It continued along this root and was lost beneath the soft structures. From the upper margin of the line of fracture at its intersection with the squamo-parietal suture an opening was made with the chisel to about the area of a ten-cent piece.

The dura mater appeared to be uninjured. There was a constant oozing of blood from the opening. No clot was found.

A narrow strip of plain-sterilized gauze was tucked beneath the line of fracture and brought out through the most dependent portion of the incision in scalp.

Twenty-four stiches were necessary to close incision of scalp. A thick dressing applied and tightly bandaged. The dressing was changed every day. At the second dressing the packing (drainage) was removed.

The opening was allowed to heal.

The first three dressings were well soaked with blood. Gradually the hæmorrahage stopped and then the stitches were removed (eighth day) there was no discharge, the entire incision being closed. The patient remained delirious for one week after operation, with a rectal temperature of 104 F. at times. Urine and feces passed involuntarily. Patient so violent that the restraining sheet was used almost continuously. An ice-cap was kept to the head Parts which were subjected to much pressure were kept well padded to guard against bed-sores. Milk ℥viij q. 2 h. and Bell., Hyos. and Stram. given according to indications.

When the delirium subsided Arn. Montana 3x, and later 6 to be followed by 30, was given. At this date, December 8th, the man is sitting up, is perfectly rational, temperature normal, feels well, and will soon be discharged cured.

In this institution we have frequently found that patients with linear fracture of the skull may present no symptoms of compression for some time but that about the third or fourth day unmistakable symptoms of compression develop. By making a small window in the skull the discharges escape, internal fractures are detected, hæmorrhages checked, and the patients make better recoveries. In these days of anticepsis and exploratory incisions, operation upon the calvarium are justified as aids to diagnosis and subsequent treatment.

Case II. M. L., 7½ years old, was hit in the forehead with a stone about noon, November 20, 1898.

An incised wound 1½ inches long just below the margin of the hair in the median line.

Through this wound a depressed fracture of the frontal bone was easily detected.

The patient was in full possession of her faculties. The injury appeared to her and others so trivial that she was adverse to the operation.

She received preparation similar to Case I. Was anæsthetized, the wound enlarged, and the fracture fully exposed.

The fracture was situated in the median line between the frontal eminences and was nearly the size of a 25-cent piece; was badly comminuted, especially the inner plate.

The portion so depressed was removed with elevator and the edges smoothed with bone forceps.

The periosteum was brought as nearly together as possible and sutured; drainage introduced as in Case I. The incision in the skin sutured.

In this case there were no symptoms save the objective ones about site of fracture. The dura mater was uninjured and there was very little hæmorrhage.

In this case the patient was kept in bed in the horizontal position for about one week. The ice-cap was not used.

Arnica montana 3x dil. q 4 h. constituted the medication.

No untoward conditions arose. The patient was discharged two weeks from day of admission to hospital.

Case III. William C., while riding his bicycle on the afternoon of November 20th, came in collision with another wheelman; was thrown to the pavement and rendered unconscious. When brought in he was in an unconscious condition, pupils unequal, contusion over occipital protuberance, with an incised wound just anterior to it. Through this wound we were unable to detect fracture.

There was no bleeding from the ears or nose nor was there much interference with the heart or respiration. The head was treated as in other cases, a flap turned back, which exposed a linear fracture, the upper end of which came just above the occipital protuberance, a little to the right of the median line, and ran downward, becoming larger until lost to sight beneath muscles attached to and below superior curved line of occiput.

A button of bone was chiseled out at the upper end of the fracture, the piece being about the area of a five-cent silver piece.

The dura mater appeared uninjured. No clot was found. The oozing was constant, but not as great in quantity as in Case No. I.

Drainage, plain gauze strip was introduced, and the site of operation treated as in Case I.

This patient was violently delirious, temperature as high as 104 F., for first three days. Refused nourishment. Stools and urine passed involuntarily.

Bell. 3x quieted his delirium and reduced his temperature.

Ice-cap was kept to head.

Dressing changed as in Case 1. Wound healed equally well.

The past week patient has been rational. Has nearly completed a perfect recovery.

Case IV. T. McC., a salesman, was thrown from seat in carriage to the ground, on the afternoon of November 22, 1898.

Was brought to the hospital in ambulance. Was able to walk into the hospital and to remove his clothes, and later, after head was prepared for operation, to walk up two flights of stairs.

A contusion was found just above the occipital protuberance. Pupils were unequal, otherwise he appeared in a normal condition.

A flap was turned back, which exposed a linear fracture, irregular in its course, extending from nearly as far forward as the coronal suture backward until lost beneath the soft parts at the superior curved line of the occipital bone. This fracture was slightly to the left of the median line. Where the line of fracture crossed the lambdoid suture there was a separation of about one-sixteenth of an inch. A fenestra was chiseled in the parietal bone just above the lambdoid suture to about the size of a 5-cent piece. Clots searched for but none found. There was considerable oozing from the edges of the opening. A narrow strip of plain gauze was introduced between the dura mater and skull for drainage, and wound treated as in Case I.

This wound closed equally well with the others.

After operation the case was similar to that of Case II. in that the recovery was rapid and uninterrupted.

The patient was discharged December 6, 1898, as cured.

Gentlemen, if you desire to understand to the fullest extent the good that hospitals can accomplish in large communities look at these four cases of fractured skulls on the one hand, and consider yourselves as students on the other. The extent of the usefulness of a hospital is not entirely confined to the attention shown to its inmates. There is an educational as well as a charitable side to all such institutions, and not until a hospital performs both of these requirements can it be said to fulfil all the possibilities of its existence.

When you remember that the brain is, as Winslow says, "the center of sensation, the source of volition, the most important and exquisitely organized of all the structures of the human body," you can understand why an all-wise Providence has better shielded it from injury [by the strong, bony casement which surrounds it] than any other organ. If you will study your anatomy thoughtfully, you will soon begin to understand the natural theology it teaches and can appreciate the enthusiasm of Paley. You will be able to perceive evidences of design in the course of every vessel and the distribution of every nerve. The arteries carrying the life-giving fluids run in grooves and channels, twisting among promontories, and hidden in their course in bony caverns, while the veins are scarcely protected at all, excepting those to which injury might prove fatal. The encasement of the heart and the bony breastworks of the lungs protect these nobler organs from injury, while those in the abdomen which antisepsis, experience, and skill have taught us may be handled almost with impunity, are comparatively exposed.

Brain surgery belongs to the latter end of the Nineteenth Century. In olden times, to perform such operations for purposes of diagnosis as were done in these cases would be considered rank malpractice. Yet it has been proved beyond a doubt that, if there be any question of the diagnosis in injuries such as these, the proper thing to do is to cut down upon the skull to ascertain beyond a doubt whether the bones are depressed, never forgetting that you may have a linear fracture of the outer table and a comminuted fracture of the inner. You must take also this fact into consideration, that an amount of force sufficient to fracture the skull is sufficient to produce a certain amount of *contusion* of the brain. Either from *contre coup* or from the direct shock of the delicate brain substance against the inner wall of the skull. In the majority of cases that were formerly thought to be those of concussion, a certain amount of contusion must have existed. In regard to compression of the brain and the symptoms that necessitate operative interference you must recollect that sometimes a concussion and contusion of the brain are so severe that they give rise to the formation of abscess. As the inflammatory process develops, it presents all of the signs of encephalitis. There will be a rise of temperature, delirium, flushing of the face, restlessness, and talkativeness which belong to inflammatory conditions of the encephalon and its membranes. This process may terminate in suppuration or it may undergo resolution. If resolution does not occur and suppuration takes place, or if there is an extravasation of blood within the skull, then the symptoms of compression become more and more pronounced. The patient becomes more comatose and begins to snore, there is great difficulty in rousing him, and involuntary discharges or total constipation occur. Speaking of compression of the brain, we have been taught to believe that the brain itself will bear no pressure, that when any foreign material, blood, or pus, or even great œdema exist within the skull, symptoms of compression will certainly result and their severity will be in proportion to be amount of pressure that is exerted on the cortex or within the ventricles. In the majority of instances this may be true, but under certain circumstances, the brain will bear pressure to a surprising extent without any symptoms being produced. In this amphitheatre, in the attempt to check a severe and well-nigh fatal hæmorrhage after the removal of nearly the entire parietal bone, I packed seventy-two inches of gauze into the skull and the patient appeared to grow better as every inch of gauze went into his head. This remarkable incident may be explained by the fact that the longitudiual sinus was open and that the gauze was packed against the sinus rather than directly upon the cortex.—*North American Journal of Homœopathy*, February 1899.

Gleanings from Contemporary Literature.

THE PATHOGENESY AND THERAPEUTIC USES OF SECALE CORNUTUM.

By Chas. H. Evans, M.D.,

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Secalè cornutum is a fungous parasite attacking the seeds of various grasses, notably rye grain or secale cereal. The name of the fungus itself is clariceps purpurea and the common name by which it is best known is ergot, a word adapted from an old French word argot, a cock's spur, from the resemblance the one bears to the form of the other. Both wild and cultivated grasses are invaded by this fungus and among the latter the familiar grains wheat, barley, oats, rice and especially rye, suffer from its presence. The spores are derived from the soil where they have been left by the crop of the previous year or years and which are carried upward with the rising fluids through the growing stem until the young ovaries in the head are reached, where the process of development commences. The finished product should not be regarded as a disease of the grain *per se* but as a parasite that has grown at the expense of the young grain. As the morbid product of rye is the one from which ergot is obtained for medical purposes it will be taken as typical of all the rest of this species of fungi.

Individual ovaries—two, three, or more in each head of grain—show that development of the fungus has been taking place by their investment with white cobweb-like filaments, the mycelium; the alteration is soon followed by the exudation of a sweet, limpid fluid which soon becomes viscid and yellowish in color; the anthers and stigmas of the flower become matted together and the swelling ovule bursts. The sclerotium or ergot proper is now fully developed, growing in size as the season advances, having entirely replaced the grain while still occupying the blasted ovary for its base. When fully grown it is an oblong body tapering at both ends, curved in shape like the spur of a cock, hard (whence the name sclerotium) brownish or purplish black externally, pinkish white internally, and having a fishy odor and a rancid taste. The embryo grain has been entirely destroyed by the new growth which now consists of fungin and a fixed oil. Ergot is most frequently met with in various parts of Europe, where rye is the staple grain, as wheat is in this country; and an epidemic disease has therefore been of frequent occurrence in those countries where mingled ergot and rye have been ground into flour. As early as the tenth century these epidemics of "rhaphanie" or "ergotism" were described, though no doubt they were of much earlier occurrence. Nowadays they are infrequent, the last notable one having taken place in 1879. This is due to the precautions now observed in sewing and harvesting and milling. At one time and another chemists have sought to isolate the "principle" which represents the activity of this drug, but thus far without success. About a dozen of them were supposed to have been discovered, but they have all failed to respond to the clinical test. Ergotine, as its name seems to imply, is not the active principle of the drug. The name is derived from Bonjean's ergotine, obtained by evaporating the fluid extract to the consistence of syrup, mixing with alcohol, filtering and evaporating.

In homœopathic pharmacy alkaloidal uncertainties are happily avoided by employing the whole drug as prepared in nature's laboratory by its conversion into tincture form and without the disturbing influences of heat.

The various epidemics of ergotism which I have alluded to have afforded us an intimate knowledge of the toxic effect of this drug. In very many instances whole provinces have suffered from the use of bread made from the rye flour with which it had become intimately mixed in grinding. The mortality attending these epidemics was indeed terrible, and the survivors were, in numerous instances, but pitiable human wrecks for the remainder of their short lives, bearing in their countenance and bodies the evidence of cachexia, more or less paralyzed and often mutilated by the loss of hands and feet, arms or legs. Death finally brought relief to those who were doomed to drag out a wretched existence for a longer or shorter time.

The various epidemics were not entirely alike, for ergotism presents itself in two forms, which, however, are but different manifestations of the same diseased condition, but differing only in intensity; these are known as the convulsive and gangrenous varieties. It is not to be understood that only one kind was present in any epidemic, but that one of these predominated.

The nervous form first showed itself by a sense of weariness and frequent giddiness, together with perversions of sensation of the skin as if ants were constantly crawling over it; this feeling of numbness, formication and tingling was the first symptom to appear and the last to disappear. It gradually increased until there was more or less loss of sensibility, or even entire anæthesia. Twitchings then became apparent first in the face and then in the extremities; retching and vomiting were the attendant symptoms. Persistent contractions made their appearance in the arms and legs, and also in the muscles of the face, and greatly distorted the countenance. These contractions were intensely severe and caused the sufferer to utter constant moans and cries. The fingers and toes were forced in close opposition toward a median line and firmly flexed, or they were widely separated.

The ocular muscles forced the eyes into unnatural positions and the pupils were greatly dilated. The tetanic spasms continued unabated with remissions only at long intervals, and finally alternated with epileptoid convulsions.

The gangrenous variety commenced with numbness, crawling and tingling in the skin in the same manner as in the former instance, but the skin soon became unnaturally reddened, then vesicles or blisters arose containing bloody or sanious fluid, painful while red, but soon becoming dark and losing all sensation. These lesions spread rapidly, united with each other and became black and gangrenous, which passed in some cases into mummification of fingers and toes, or, in others, to the self-amputation of hands, feet, arms or legs. Instances are related in which all the extremities were lost.

The fatality attending both these varieties is appalling.

In order to properly appreciate the influence of this poisonous substance upon the body it should be remembered that the essential effect of ergot is to cause persistent contraction of muscular fibre, principally of the involuntary kind. The property of inducing tetanic spasm is its characteristic effect in all parts of the body, and upon the continuance of which so many serious consequences depend.

This influence exerted by ergot upon the muscular fibres of the uterus has been utilized for an unknown period to promote the expulsion of the fœtus during childbirth, and the popular German name of mutterkorn denotes its primitive use by the laity. Indeed, it is principally with this agent that the average midwife goes forth to conquer, often with the apocalyptic rider on the pale horse for company, as the great number of still births in their practice testifies. This fact can only be accounted for by their early administration of ergot, which, constricting the placental vessels, cuts off the fœtal circulation before the os has become fully dilated.

The muscular contractions of the uterus instituted by ergot does not possess the rhythmical character of normal effort, but is tetanoid, instead, and not intermittent; ergot should, therefore, only be given when no obstruction exists for the free passage of the fœtal head.

A rigid or insufficiently dilated os, a contracted pelvis, or a false presentation, are contra-indications for its use for the reason that an asphyxiated infant or a ruptured uterus may be the penalty for neglect of such precaution.

It should always be remembered that the employment of secale in obstetrical cases is generally to secure a mechanical effect, and this should be gauged as if it were a manual act. The greatest sphere of usefulness of secale is post-partum, when there is uterine inertia, when it is necessary to expel the secundines or to arrest hæmorrhage by the forced closure of the open uterine sinuses; even in these last named cases there is a vital as well as a mechanical element to be considered, for I have in several instances seen ipecacuanha check uterine hæmorrhage when ergot had failed. For this and other reasons this potent drug should not be used in a routine way in obstetric cases.

In all epidemics of ergotism the tendency to abortion in women, and in animals experimented upon, was so constant that it would seem to promise much in the repeated accidental miscarriages in feeble cachectic women about the third or seventh month; its claims in this respect are evidently overlooked. Severe and tetanoid after-pains may find their homœopathic remedy in secale, as well as in puerperal convulsions when the muscular contractions transferred from the uterus to the voluntary muscles may be checked by a return of these to the proper organ.

In non-puerperal patients ergot has also been used in a mechanical way to restrain the menorrhagia associated with the growth of fibroid tumors, and even for the death and expulsion of small uterine fibroids and polypi by the contraction of their supplying arterioles. This result, however, only applies to fibroids that project into the cavity of the uterus and are more or less pedunculated. When they are situated in or wholly outside the uterine walls ergot will exert little or no influence upon them.

For the same mechanical reason ergot has also been given in material doses for subinvolution of the uterus, chronic metritis and other "atonic" conditions of the womb, in pulmonary hæmorrhage, and for the obliteration of aneurism (hypodermically). It is beginning to be understood nowadays, even by the dominant school, that when non-uterine bleedings are treated by this agent the patient is more apt to be suppressed than the hæmorrhage.

Ergot also has the property of causing a train of symptoms closely resembling those known under the name of Raynaud's disease, or bilateral ischæmia, in which arterial spasm in the upper extremities when occurring in cachectic persons is followed by pallor, numbness, crawling and creeping sensations in the skin; sometimes with burning or actual pain, all of which steadily progress, until symmetrical gangrene becomes established.

This continuous spasm of the arterioles in any or all parts of the body is evidently responsible for the trophic changes that develop in all the tissues and organs, and according to the degree or extent in which nerve centres are impoverished, sympathetic or spinal, the gangrenous or the convulsive characters become manifest. These may be roughly compared to the results following upon the ligature of vessels and those caused by the presence of thrombi, emboli, etc.

The subjects of and for secale first show a general failure of nutrition and then a bloodless appearance, their figures are emaciated, spare and "scrawny," and have a dried up look; there seems to be no juice in their bodies. Their features are more or less retracted and hollow, their eyes appear large, and are sunk in their sockets and are apt to be surrounded by a wide, blue margin. Their skin is dry, shrunken (withered), harsh and sallow in appearance while the lips are thin and bluish or else very pale. Sometimes the skin of the fingers becomes wrinkled as if they had been soaked for some time in hot water; occasionally a cold, clammy sweat covers the body, more especially above the waist line. Extreme weakness and weariness are complained of and the person is soon prostrated after making ordinary exertion. Whether the person is resting or is walking there is almost constant trembling, especially in the extremities, while tingling and numbness and crawling sensations are experienced in the face and all other parts of the body. An unsteady or even reeling gait is also noticed. Such an individual always feels cold, and the surface of the body is actually so, but there is no desire for artificial warmth as heat always affects them unpleasantly. Intense burning pains are felt in different localities of the body. All secretions and excretions have become chemically altered and thin in character and are exceedingly offensive in odor.

The altered character of the blood and the diseased capillary walls allows of hæmorrhage into the skin and cellular tissue and from any outlet of the body, nose, stomach, lungs, intestines, urethra, uterus, etc.; the blood thus discharged, whether vomited, spit up or voided in any other way, is observed to be uniformly thin and watery, very dark or blackish, deficient in fibrine and corpuscles and without any tendency to coagulate, continuing from hour to hour and even day after day. Even a slight wound will continue to bleed for days at a time, the blood being of this same thin, dark, non-coagulable nature. The blood in all cases is of venous and septic origin with dissolution of its fibrine and corpuscles. If the person be a woman the menses are excessive both in quantity and duration and may even assume hæmorrhagic character. Severe bearing down, forcing and expulsive pains are frequent, the flow is increased by every movement of the body and comes in a gush after each cramping, uterine, pain. The menstrual discharge is very thin, very dark or blackish, exceedingly offensive and generally flows in a passive way. Excrescences have formed upon the os and discharge a thin, offensive sanies. The os and the vagina take on a bluish or slate colored appearance which may terminate in gangrene and also bear some resemblance to cancerous degeneration; burning pain in this region as if from a coal of fire heightens the resemblance. The destructive effect of secale upon the skin and cellular tissue is suggestive of its use in gangrene of any organ, anthrax, petechiæ, degenerative ecchymoses, etc.

Intelligence is spared by this drug, consciousness is entirely retained, the mind remains clear to the last moments of life.

In the gastro-intestinal tract the salivary secretion is found to be greatly increased. Singular as it may seem the appetite is good and even a ravenous hunger is not uncommon. Vomiting of food and drink has a projectile, tetanoid character, there is much retching but little vomiting. The vomited matter is dark, or bloody, or of a chocolate color, or like coffee grounds, with an intense burning in the stomach and sensitiveness of the epigastrium. Contraction of the muscles of the stomach and intestines causes severe colic pain and increased peristalsis. Tetanoid contractions of the diaphragm cause severe hiccough. Dark mucous stools or thin olive green passages are discharged from the bowels; the diarrhœa may be colliquative, and this is especially apt to be the case with paraplegia and loss of power in the sphincters. Cataract both of the soft and hard varieties were developed in a large number of poisonings, no doubt in consequence of the ischæmia characteristic of this drug, which is suggestive of its use in senile cataract.

Also to be remembered is the general tendency toward the septic or putrescent state that attends upon all the disorders instituted by secale cornutum.—*Clinique*, December 15, 1898.

THE ETHICS OF PRIMITIVE PEOPLES.

A Lecture by Dr. Daniel G. Brinton.

We really know nothing about the truly primitive man; but we call any savage, any barbarous tribe or nation, who is at present, or who has been known to history to have been, in the lowest condition of culture, "primitive." We understand by primitive peoples, savages, barbarians, unlettered races, living in the hunting and fishing condition of human life (as low as any we can think of); and I shall examine the question whether they have an ethical instinct and whether they obey it.

The psychological basis of eithics is to do that which we feel we ought to do. It is the carrying out, in life and action, of the sense of duty which we feel within us. Kant, that great master of metaphysical philosophy, in his wonderful treatise on ethics, practically acknowledges that, psychologically or metaphysically, the sense of duty—the "I ought"—is something incapable of further analysis; that we strike, as it were, bed rock, when we come to that; and on that supposition he bases his only argument for the belief in a God.

Nevertheless, modern writers, leaving the field of metaphysics and going into that of ethnology, have come to a definite, clearer opinion. They have not given up as insoluble the deep and mysterious problem why we feel that we should do an action and should not do another one: they look upon it as being an expression (worked into our minds through limitless ages, in a number of generations of ancestors) of the sense of survival. The basis of ethics, in the modern philosophy of ethnology, is, simply, that we do that, and we feel that we ought to do that, which contributes most to our preservation and progress. There is no other basis which the modern philosophy acknowledges for ethics than that; it is the effort to survive in the struggle for existence, "to continue always that which we are, with such improvements as will prevent failure."

When we speak of an ethical action, we mean one which psychologically arises from the sense of duty. Rid the mind of all else than that psychological aspect, and we have a clear field; we will not say that this or that action is good or bad in itself, but shall always ask for the motive. Is that motive one which arises from the sense of duty, the best enlightened duty which that man or woman knows of at the time and place? Not what she will know to-morrow—no, indeed. If we could all look into to-morrow, we should change our actions to-day; very materially, and to great advantage, but we cannot; therefore, I shall examine the psychology of primitive peoples from the pure element of duty: Do they act according to a sense of duty, and have they a sense of duty? Have they what the Germans call "Das Sollen" ("the should") in their hearts? If they have, do they obey it? If they do, why should we not concede to them an ethical nature? Who of us cannot look back in his history and see that over and over again we have done that which was other than our duty, but did not know it at the time? What sect of religion is there that has not stains upon its history arising out of their very devotion to the sense of duty? Need I refer to the horrors of Torquemada's Inquisition, which has been a blot on the history of Christianity, far greater, more heathenish and horrid, than any of the persecutions of heathen Rome?

There are certain predispositions of mind—certain errors of judgment—we are all apt to fall into in examining primitive people—savages, Indians, negroes, barbarians. The principal errors of judgment are four. First, the judgment of action instead of motive. In the missionaries' accounts of the savages or pagans whom they go to convert to Christianity, the emotions are appealed to by a description of the terrible actions they commit. They hurl innocent people under the car of Juggernaut to be crushed by its wheels; they burn slaves and wives in a holocaust that consumes the chief's body; they murder their children and destroy their parents; they eat each other and their enemies; many other things terrible to listen to, apt to soften the heart and loosen the purse strings, yet motive is ignored, and it is the motive only that should concern us in examining the question of ethics.

Another error—never judge the savage or primitive tribe which has been in contact with the blessings of civilization and Christianity. These blessings invariably lead to degeneration in the savage nature. There are sound ethnological reasons for this. I cannot assert that it is civilization, precisely, nor Christianity, precisely, that invariably leads to this degeneration; whether it is the gin of the trader or the entire subversion of ancient principles, rooted in the mind by the new doctrines; but the degeneration is everywhere recognized, known, and visible. The primitive man must be examined as he is before those inestimable blessings are presented to him.

Third is the "dualism of ethics," important because more visible in savage than in civilized life. Ethnology bases all ethics on the idea of self-preservation as its final analysis. Self-preservation requires far more strenuous and desperate endeavor in savage conditions than in our own. The Australian blacks, or the Fuegian Indians, are small bands roving over a certainly sterile country, barely obtaining enough food and knowing that the moment they meet another band the result is a hand-to-hand combat. They therefore feel that they owe to themselves everything which is possible to sustain and preserve life and the integrity of the tribe, gens, or clan; but that very instinct makes them feel, also, that they owe to the tribe the destruction of the enemy; and they have one code of morals (which we would call very ethical) for themselves and another code of morals (very unethical) for the others. All that we sum up under the general name of war; all the violations of every principle of humanity, truth, and respect for life and property which we carry out in war to-day, without the slightest hesitation, they do in a more naïve, open, simple, and rude manner; but we have no reason to cast any stain upon them on this account, as compared with ourselves. So long as the necessity for tribal or national existence remains through war, all these elements of war must for ever remain the same. War cannot be carried on without slaughter, destruction, deceit, falsehood, and every other in itself unethical unsocial action. Remember, therefore, the "dualism of ethics."

The fourth error, often committed, is not understanding the condition of the primitive man's conscience, which is not individual (as ours generally is supposed to be) but social—communal. He has the conscience of his tribe, of his family, of his clan. He does not feel when he is injured that his individuality is attacked (that is not the sensitive point with him), but his clan, his family, is attacked through him; he is only the medium of the attack. So, when he attacks another he does not do it of his own action (as the lawyers say, "proprio motu"), but as representing the spirit of the clan, of the members of his tribe; and he only feels conscience-striken when he has done something which injures his clan, his family, his totem, whatever that division may be.

Such are the fundamental errors it is necessary to guard against carefully when we examine into the ethics of primitive peoples. The prayer book of the Protestant Episcopal Church divides duties into duty toward God and duty toward the neighbor. As to the psychology of the primitive man, how much of that is actuated through duty toward God and duty toward neighbor? In the savage's sense of his duty toward God he may easily, without any fear of contradiction, be placed in the front rank as a truly religious man. I know of no sect of later religions, no branch of conventual or monastic life, which at all surpasses the ordinary roving red Indian in his devotion to God.

Captain Clark, of the United States army, one of the first authorities on this subject, says in one of his recent works that "the Indian is literally a man who prays always; he never fires a shot at the red deer that he does not offer up a prayer to his guardian spirit that the shot may hit; he never casts a grain of corn into the ground hoping that it will fructify and bring a harvest, that he does not go through a series of religious rites in order that the gods may see and prosper it and bring him the wished-for return." All his life is governed by his duty to God. Say you it is selfish—for common and material aims? Look about: What are the churches for? What are their aims? Let us not draw invidious comparisons but accept the fact, rather, that the man who is thoroughly imbued with the feeling that the unseen powers of the world are guiding and governing every action of his life, and who in turn, is constantly appealing to them for aid, information, and succor, is a truly religious man. All who have lived intimately among untutored savages, not yet imbued with foreign ideas, are of one mind, that they are, throughout all their movements, governed to such an extent that they are the slaves of their religious sentiments.

Among those institutions of savage life which are practically universal over the world it is very obvious there are three upon which all primitive life is based, wherever we find it. One is the primitive social group. We call that among the red Indians of America, the "totem;" among the Australian blacks, the "kobong." It is an equivalent to what the ethnologist calls the "gens" or what we English call the "clan." Whatever it is, it is the primitive social group. It is not always based upon blood kinship, although theoretically it usually is. Most likely, as my distinguished friend Miss Alice Fletcher has urgently argued, the totem among American Indians is absolutely and strictly religious - not consanguine - based upon the founders of the totem having received similar inspirations from God in the sense of seeing identical visions. Those who dream alike form themselves into a society, and in that society grows up the totemic feeling. Wherever we find it—and we do find it among the blacks of Africa and Australia, throughout the Polynesian groups and among all the red Indians—it is characterized by this same deeply religious feeling; it governs the life of the individual. To it he owes his greatest duties, for it he will sacrifice all else. He is brought up—born we may say—into the very idea that the highest of all his duties is to the religious element expressed in the totemic bond.

Another institution, almost everywhere found, is that of the taboo—the prohibition—that which calls something sacred, which reserves something from the mass. The word "taboo" is Polynesian; but the idea of having something sacred—something belonging to God—to the divinity—is found everywhere. It may be the medicine taboo of the medicine man of the Ojibway Indians; or it may be the sacred grove such as used to shade the Temple of Delphi in Greece. Whatever it is, it is separated from secular objects and belongs to God; and woe to him who violates the sacredness of the taboo.

Third, are the initiation ceremonies (of both sexes) which are practically universal throughout the world. In Australia they are known as the bora, or burbung; and there they are carried out as the one religious service, or rite, which governs their whole lives, in whose performance the young men and women of the tribe willingly undergo such dreadful tortures as nothing in the whole list of Christian abnegation can equal. St. Simeon on his pillar was a trifle compared to what these will undergo, not single individuals, but all members of the tribe. Mutilation of the most dreadful character is willingly accepted. All this is done from a purely religious idea—from a sense of duty toward God—the sense of their religious duty overcoming all other feelings, subjecting to it all passions, sensations, and emotions. This is the power of religion in primitive life.

I might also speak of the vows they undertake at that time. So common is this among savage nations that probably not one is exempt. People lay upon themselves stringent vows which mean self-denial of that which they would most willingly do were it not that the sense of duty prevents the doing it. There are those who, for instance, will deny themselves food of a particular kind—the kind that they most like—deny it absolutely, and will rather starve to death (and have been known to starve) rather than eat the forbidden dish. We know the prohibition which from early times was laid upon certain animals. Those animals are supposed to have been the totemic animals of the clan, from which the clan was named: and it is from that idea—that we should not taste, in any way, by killing or eating, the animal after which the clan was named—that certain prohibitions against uncleanliness have arisen—as Mohammedans and the Jews to-day will not eat pork, and as a great many other nations refrain from this or that article of food.

In a certain Alaskan tribe, any young man or woman who wishes to show that he or she is really a good member of their church will strip his or her back and allow all the members of the tribe, with long, sharp switches, to switch them to the extent that they desire, and this must be borne without murmuring, though their backs are flayed and the blood is streaming to their feet. This is a trifle compared to what others are willing to undergo. Those ordeals are common to almost all savage tribes and are for the one purpose of proving that they consider the sense of duty to God above any feeling—any sense—of weakness for themselves.

Are these low tests, showing no sense of duty, no desire of improvement? I call attention to the fact that the religion of savage people by inculcating such doctrines as I have mentioned develops some of the finest principles in human nature. It is a very good thing to have perfect self-control—to be willing to deny ourselves and do it bravely and without flinching, and permanently. The habit of obedience is a very excellent trait to be inculcated; and obedience is the very essence of the sense of duty.

They look upon their divinities as protectors—as beneficent and kindly disposed. Each Indian regards his guardian spirit as a kindly being, one who is constantly thinking of the welfare of him over whom he is placed and whom he guards; and, therefore, he attains, in his own mind, the ideal of a being constantly thinking of another being—aiming for the welfare of that other being—developing in this way, the altruistic sense to its highest possible condition. That is shown in the ideals which they themselves form; in their legends, and in the description of their gods; because we discover, among these savage tribes, beautiful stories—not borrowed from any European source—of the gods who came to help man in his early infancy—who brought him the corn; who taught how to manufacture his arms; who told him where the game and the fish were hiding and in all ways aided him; who gave him laws; who founded his institutions; who preserved his tribe. In all these respects he was constantly working toward an ideal of the perfectability of nature; and he himself, at times and often, sought to warm his friend and comrade to hear the exhortations of this guardian spirit and beneficent deity; he constituted in himself a deity for another one.

It thus appears that the idea of duty to God is strong, and that it is beneficent, in the savage mind. Let me now pass to the sense of duty to his neighbor. Who is our neighbor? A question put long ago. It had been answered up to that time by most men that our neighbor is a member of our family, in the first place, and next, he is locally somewhat near us, and is a member of the same clan, tribe, or nation. We feel constantly that our duty diminishes just as he is removed from us, our first duty being to those who live in our own household. If we do our duty to them, we think we are doing enough—in fact, that it is hardly worth while to let it stray next door. We rather like the text that "charity begins at home." We should not object to it if it said "and ends there." The savage does consider that it ends there; that his duty is distinctly toward his own tribe, gens, or clan, and not beyond that; and he knows very well why; because the other clan, the other gens, the other family, are trying to steal his house, his lands, and his possessions and everything else, to enslave him and perhaps to kill and eat him. Therefore, he has no sense at all of duty toward them. His duty is toward his own people only; and it is to treat his neighbor as his neighbor would treat him, if he had a chance.

Therefore, we must consider the sense of "duty to our neighbor" in the savage as confined, distinctly to intramural residents. In this sense we may speak about his tendency to violate property rights. Complaint is often made that the savage is a natural robber—a thief. That is true. He does not rob, however, from members of his own clan, or gens. He will, as a general thing, rob from his neighbor—the other clan, the other gens, the other man. Possibly if we recall the history of America we may discover that the savage is not alone in that peculiarity.

There is another reason why we should say something in favor of him. The typical savage has no property: he does not and cannot own any. The idea of personal property does not belong to the savage: everything is owned in common in savage life: the gens—the clan—own everything. There was an Australian settler who thought that he had a method of getting ahead of the black fellows by bribing one of them to do something injurious to the fellow's clan; so he gave him some powder and trinkets; but he could not make the black understand that these were for himself, as against the rest of his clan. The savage had never been accustomed to own anything; therefore, he shared the articles with the other members of the clan and the settler failed in his attempts at bribery. Another Australian settler was indignant that they stole his sheep; he managed to seize some of the black fellows who had done so and brought them before a court of justice, such as they have on the frontiers of Australia (generally His Honor Judge Lynch presides); but a black fellow who knew enough English to make his defence said that he had not stolen the sheep—he had simply taken the sheep in place of the kangaroos which the Australian settler had shot; that the tribe generally lived upon kangaroos, but that the settlers had shot them all, so they had nothing left to live on. They did not see why they should not take the settlers' sheep, just as the settlers took the kangaroos. His Honor considered that a tolerably good plea and let him off.

Again, the idea of the appropriation of another person's property (even of a personal character), without due return for it, has gone far up into civilization. The rule of Sparta was that theft, in itself, was honorable, but to be discovered in theft was most dishonorable ; and the Spartan boy in story allowed the stolen fox to gnaw out his vitals rather than disclose the fact that he had stolen. Possibly we might bring instances from nearer home where the embezzling politician is considered a very fine man and worthy of our votes, so long as it is not discovered and proved against him ; and I am afraid, even in the latter case, that he would not be wholly without supporters. So the whole idea of property—the violation of property rights by the savage—is not to be considered ethically from the point of view from which we regard or pretend to regard it.

Considering his disrespect and disregard for human life—his readiness to destroy life—it has been truly said about many tribes of savages that not alone are they cruel, inhuman, and murderous toward other tribes around them, but among themselves they murder their own infants, and kill their aged when they become a burden to the tribe. It is perfectly true that they do, and in a great many instances ; but here again we must look carefully to the condition of savage life. Mr. Howitt, the son of William and Mary Howitt, was settler in Australia. He had been brought up with that delicate literary sense, and also that fine appreciation of human sentiment, which characterized the works of both his parents; and he has written upon the condition of Australian savage life in the most sympathetic manner of anyone whom I have read. He went among them; studied their life; tried to discover what prompted them to these extraordinary actions which seemed to us so brutal and inhuman; and his conclusion is interesting, because it is fair. He decides that all those actions are prompted by a sense of self-preservation—preservation, that is, not of the individual, but of the clan, or gens. He tells us that it is no uncommon thing for a mother among the Australian blacks to destroy her infants; but when she does preserve one, she loves it with a fanaticism of maternal love that Mr. Howitt says is scarcely to be equaled in civilized lands ; and when that one dies, her grief exceeds all bounds. She mutilates herself and scarifies her flesh with sharp stones, showing every sign of profound and bitter grief. It is the one that she has chosen to love and rear, and that has been taken from her; and she is sorrowful and knows no consolation. So even in that low stage of society, in the midst of the violation of everything which we think sacred and holy, there is a basis—the strong sense of maternal love—truly ethical.

Then again we are constantly saying of the wild savages that they for generation after generation seek to satisfy the thirst for vengeance—they never forgive an injury. It is true ; but that injury, in savage life, is scarcely ever personal. It is still the idea of the preservation of the gens. Among the Australian savages (to whom I allude more particularly, because among the lowest of human kind) the law of the gens is, if a man is killed by the whites, or by a neighboring tribe, that his blood must be washed out by the blood and the death of some one of the enemy. The duty of that falls upon the next of kin. If for instance a man is killed, a brother of the deceased must go forth and destroy some person of the enemy. If he does not, he is looked upon with the utmost contempt by the crowd. If he is a married man, his wife leaves him ; if a single man, not a girl in the tribe will speak to him ; if he has a mother, she will tell him to leave her house and not come back until he has washed away that stain from the tribal record. Therefore, he is forced to seek this revenge.

On this principle of blood revenge, which we find throughout the whole savage life, little by little, is built up the system of jurisprudence. It is found, after a while, that blood revenge constantly leads to another violation of life, so that a method is arranged by which compensation can be given; and that is the first step toward the jurisprudence which we enjoy. It is a very long while before we are taught that the punishment of the criminal is not a personal affair at all; it is, in reality, an affair that society has to do with, and not the person, and not the clan, nor the tribe; it belongs to society at large. Only then do we arrive at another plane of ethics; but the principle is ethical from the very start, because it is dependent upon and derived directly from the sense of preservation. If the tribe did not act thus, the other tribes around would know that they could kill them with impunity and not be killed in return; so it is directly based on what, I claim, is the ethnological foundation of ethics.

It is true, also, that parricide (the destruction of parents)' is something not at all uncommon. When a man or woman grows old, he or she is knocked on the head. They know it; they expect it; they want it; they grow tired of living. They ask for it to be done, frequently, though not always. Among the Fuegian Indians of Terra del Fuego, South America, the old women are generally eaten, and they don't enjoy the prospect; so when the tribe settles down for the night, the old women go off in the bushes and hide. Nevertheless, the custom of parricide and matricide is for the preservation of the tribe. The old people cannot hunt, they cannot catch fish; they can be of no particular use; they eat, and, therefore, the slender stock of provisions on hand does not, in the tribal notion of economy, justify their continued existence, so they are made away with. Moreover, they do not enjoy life; and it is quite common, among many of the Alaskan tribes, and the Chutchi of Siberia, for the old people to say to the young members: "I am tired of living, it is time for me to go to my ancestors and pass away to the good men who have been before me. I prefer to be with them." We have very brilliant views of heaven; but I do not hear we have often any great longing to go to it. They have; they are willing to be sent there; and they usually are promptly dispatched.

I, myself, as a physician, have been repeatedly told that we are very much behindhand because we do not practice that which we fondly term euthanasia—give our old folks some potent drug which would send them off to another world. I believe the idea is that we do not do it for fear it will lessen the doctors' bills; but I am not going to debate our motive. Human sacrifice is common, even among tolerably cultivated savage tribes; but in a distinctly religious sense, and for the sake of religion, I presume we feel that we ought to do anything. It is, in fact, ethical—ethical in itself; when the mother, in ancient Carthage, used to throw her infant into the fire before the god Baal, she was performing a work of the very highest religious significance and devotion; and, although it was destructive yet it could not be called unethical, but rather eminently ethical.

I shall pass now to feelings which are nearer to us—of personal friendship, of love; do they exist among savage tribes? Literature contains stories of how travelers among savage tribes were adopted by the tribe—taken in as brothers. It is usually by some strange ritual. The Aitas, of the Phillippine Islands (we may know them better in the future), have a method of making you a brother which is touching and simple. One will give you a rough stone; you take it and scratch his arm till it bleeds, and he yours; then he sucks your arm and you suck his, and after that you are brothers; and that Aita would die for you in a moment—he would not hesitate an instant to sacrifice his life to yours, and he expects you will do the same for him; in other words, friendship is then sealed. Absolutely and without reserve. That is common among the American Indians also; repeated instances are known to me; I know men who have been adopted into the brotherhood of the clan, and they knew perfectly well that any member of that clan would die in a moment to save their lives, if the occasion were such as needed it. My friend Frank Hamilton Cushing is a member of a sacred society and a brother, and he would not for a moment doubt that many with whom he is daily associated (or has been) in Zuni would sacrifice their lives to save him.

Many such examples are on record: and as for their loyalty to their own rulers, it surpasses belief. There is a remarkable story related by Sir George Gray in his "Polynesian Mythology." Telling of the habits of some of these Polynesian islanders, he speaks of a case where a number of them were with the chieftain out in his boat near one of the islands. Through some mischance the fragile boat upset and the dozen or fifteen occupants were thrown into the water. All of them joined hands and placed their chieftain in the middle of the circle. The water was filled with sharks, and they knew it; they had to swim a mile or two miles to get to land; and they swam in that way, every now and then a shark (one of the great man-eaters of the southern seas) would seize one of them and carry him away, staining the water with the blood of the victim; but those next him would simply join hands, fill the missing place, and, thus renewing the circle, swim on, protecting, in that way, their chieftain, until they reached the land, only four or five out of the fifteen surviving; but it was personal loyalty—devotion—true friendship.

We have a foolish notion that if a person goes naked, he must be immodest. That is a great mistake. Every one who has traveled among savage tribes reports that their modesty is just as noticeable as among ourselves. Mr. Furness, who recently went through Borneo, stated, in an address which I heard him deliver, it was a common thing there for people to go wholly nude; but he said he had not witnessed, during his journey through Borneo, any woman commit a single consciously immodest act. That was high tribute; and that is a tribute which almost all travelers pay to savage tribes everywhere. They are capable of feeling deep and fine emotion, one toward the other, quite as deep as ourselves.

Father Sahagun, a Spanish monk of the XVI. century (who would not incline to overlook any weakness in the American Indians), says: "The Aztecs were a good people, attached to virtue, simple and truthful in social intercourse; they shunned lies; they were industrious in labor; and they were pious toward their gods." That, from a Spanish monk of the XVI. century, means a great deal. Father Antonio Matho was in the Phillippines about 150 years ago, and went up among the little black people in the interior, in order to try to convert them. His impression is written in the true Spanish style, full of learned allusions, but pleasant to read. "I ingenuously confess," says the good father, "that their barbarous condition and barrenness of intelligence, when I came to know them well, instead of causing me pain, brought to my mind those golden ages portrayed by Ovid in his 'Metamorphoses;' by Cicero in his 'Erraticus;' and by Seneca in his 'Epistolæ;' and I also observed among them the noble virtue expressed in a sentence of Epicurus, which teaches us 'how easy it is to satisfy all the real wants of human life.'"

In support of my contention that it was through the ethical principle as representing the idea of persistence—of survival—I quote from the last gospel which has been preached (that of Darwin) by Darwin himself, who says: "Thus a tribe—including many members who might possess, in a high degree, the spirit of patriotism, fidelity, obedience, courage, and sympathy, and were always ready to aid one another and to sacrifice themselves for the common good—would be victorious over most other tribes; and this would be natural selection."—*Scientific American, Supplement*, Feb. 4, 1899.

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HAHNEMANN'S MODE OF ADMINISTERING MEDICINE.

IV.

WE were not quite correct when, in our third article on this subject, we said: "Hahnemann does not appear to have recognized the necessity of paying any attention to the time-element or duration of the triturating process as capable of affecting the degree of attenuation of substances subjected to it." For in the note to §287 of the *Organon*, after saying that succussion with two, three, ten and more strokes makes the same mixture of a medicinal fluid with one hundred drops of spirits of wine, much more intimate than with one stroke, and thus "the medicinal power becomes much more potentized, and the spirit of the medicine, so to speak, becomes much more unfolded, developed and rendered much more penetrating in its action on the nerves"; and that, therefore, "if the required object we wish to attain with the low dilutions be the *diminution* of the doses for the purpose of moderating their powers upon the organism, we would do well to give no more than two succussion-jerks to each of the twenty, thirty, &c., dilution phials, and thus develop their medicinal power only *moderately*;"—he goes on and says, "it is advisable, in attenuating the medicine in the state of dry powder by trituration in a porcelain mortar, *to keep within certain limits*, and, for example, to triturate strongly, *for one hour only*, one grain of the crude entire medicinal substance, mixed with the first hundred grains of milk-sugar, and to triturate the attenuation of one grain of this mixture with another hundred grains of milk-sugar *likewise only for one hour*, and to make the third attenuation *also by one hour* of strong trituration of one grain of the previous mixture.with one hundred grains of milk-sugar, *in order to bring the medicine to such an attenuation that its development of power shall remain moderate.*" From this it is evident that he did believe that the longer the triturating process is continued the greater is the attenuation of the medicine effected, and consequently the higher is the development of its medicinal power.

Though Hahnemann looked upon succussion or shaking in the case of liquid medicines as also a form of trituration, yet the fact of his recommending the fresh juices of vegetable substances to be subjected to the processes of trituration with sugar of milk for the first three potencies, that is, up to "the millionfold powder attenuation," before reducing them to the liquid attenuations, and declaring his belief that "the fresh juices thus seem to acquire more of dynamization than when diluted and potentized in alcohol each with two succussive strokes,"—this fact shows that he looked upon trituration as a more effective and potent dynamizing process. He does not, however, advance any reason for this belief, beyond appealing to experience, which he invariably does for any opinion that he wishes his followers to look upon as a fact or law of nature.* The reader must have seen how often had he changed his opinions by appeal to the same authority.

Hahnemann made a distinction between *dilution* and *dynamization*. "Dilutions, properly so called," said he, "exist almost solely in objects of taste and color. A solution of salty and bitter substances becomes continually more deprived of its taste the more water is added, and eventually it has hardly any taste, no matter how much it may be shaken. So also a solution of coloring matter, by the admixture of more and more water, becomes at last almost colorless, and any amount of shaking will not increase its color. These are, and continue to be, real attenuations or dilutions, but no dynamizations. Homœopathic *dynamizations* are processes by which the medicinal properties, which are latent in natural substances while in their crude state, become aroused, and then become enabled to act in almost spiritual manner on our life; that is, on our sensible and irritable fibre. This development of the properties of crude natural substances (dynamization) takes place, as I have before taught, in the case of dry substances by means of trituration in a mortar, but in the case of fluid substances, by means of shaking or succussion, which is also a trituration."

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* Perhaps he thought, as he did in the case of Sulphur, that by trituration the whole of the juice—all its constituents—are retained, whereas by making a tincture from it with alcohol from the beginning, a good portion of the constituents is precipitated as sediment, which may after all contain some of its active principles.

Hahnemann could not but admit that by these processes an enormous subdivision, *material division and diminution* of the substances subjected to them, is effected. But he maintains that preparations thus made "cannot be simply designated as dilutions." According to him the further and further attenuation of their particles enables the trituration or succussion to "enter still further into the very essence of the medicinal substances," and thus "liberate and expose the more subtle part of the medicinal powers that lie hidden more deeply, which could not be effected by any amount of trituration and succussion of the substances in their concentrated form."

The fact of the living organism being acted upon by the highly attenuated particles of substances which are inert in their crude state, deceived Hahnemann into the belief that it is not the material particles which thus act, but "the subtle part of the medicinal powers that lie hidden more deeply." He evidently did not for a moment reflect as to where they could be hidden, if they are not inherent properties of the particles themselves of the medicinal substances.

Hahnemann, we believe, would have been saved this delusion if he had cared to remember what he knew very well, that besides a number of substances which are inert in their crude state, but whose active properties are developed by their minute subdivision by trituration, there are a larger number of others which are violent poisons in their ordinary or crude state, and a still large number of others again which, though not deadly poisons, yet act powerfully upon the living organism. These substances, toxic and pathogenetic, prove to be remedial agents by virtue of their toxicological and pathogenetic properties.

Now the question is, whether these properties are ever really exalted by trituration and succussion. The quantity of the substance remaining the same, the triturates, inasmuch as the particles in them are finer and finer, must have more extensive action, which may be called more potent or exalted action. Thus take a grain of a powerful poison such as arsenic or strychnine. The administration of the whole of the first decimal trituration made from the grain would be followed by more violent action than if the solid grain were administered as such. Similarly the whole of the second triturate from the first would act more powerfully than the latter. And so on. But one grain of the first triturate would certainly not act so powerfully as the whole grain of the original substance. And with each successive trituration the same weight of the triturate would act less and less powerfully than the original substance. But whether the diminution of action of the triturates would be in exact proportion to the fractions they represent of the original substance is a question which is not easy of solution. But that their action must gradually become weaker and weaker, there cannot be a doubt. And, indeed, it was for this weakening effect that the processes of trituration and succussion were originally invented.

In Hahnemann's first series of experiments which were made on the healthy, and which produced the *Materia Medica Pura*, these reduced doses could not have gone in anv case beyond the first centesimal attenuation. And this should have convinced him that in the case of a very large number of drugs their properties are quite manifest in appreciable doses; that they act as remedial agents in infinitesimal doses by virtue of these properties; and that therefore the homœopathic processes for reducing the doses of medicines had not to bring out any new or spiritual powers of those drugs from their inmost recesses.

If Hahnemann had adhered to the simple and rational explanation he originally gave of the action infinitesimally small doses of drugs, namely, the increase of their penetrating power by the fineness of their particles produced by trituration and succussion, it would have been better for homœopathy, for then he would not have been led to so many contradictions which have puzzled and embarassed his disciples, and brought such a bad name for homœopathy by giving it quite an unscientific aspect in the eye of the cavillers of the system. Most of these contradictions have resulted from his attempt to distinguish between dilution and dynamization, and from his anxiety to keep his doses weak lest they be too strong for the patient and to maintain their potency lest they be too weak for the disease.

There is another consideration of the effect of trituration and succussion which may lend color to the view that they do develop new medicinal properties. It is this. A large number of drugs or poisons, if not all, have different actions in different doses. Their actions are violent in massive doses, by virtue of which either the organism succumbs and dies, or it expels them by vomiting and purging. In either case their other actions are not manifested for want of time to be developed. These other actions can only be brought out by smaller doses. How far the doses can be reduced for the development of these actions, and what specific actions can be developed by gradually reduced doses can only be determined by repeated and continued experimentation.

Hitherto we have been considering Hahnemann's mode of *preparing* medicines preliminary to their *administration* to the sick. Here also we shall see that his notions of dynamization have led him to frequent changes of opinion as regards the mode of such administration.

The forms which the homœopathic preparations assume are the powder (the triturations) and the tincture (the liquid attenuations). The actual dose to be given to patients is either a grain or several grains or a fraction of a grain of the triturations, or a drop or several drops or a fraction of a drop of the tinctures. When a fraction of a grain has to be administered, a grain of the particular trituration has to be equally diffused in a certain quantity of sugar of milk, which may then be divided into a number of powders,—four, ten, twenty, &c., according as it is wished to give a fourth, a tenth, a twentieth, &c , of the grain. Similarly when a fraction of a drop has to be administered a drop may be mixed in a certain quantity of water, ordinary or distilled, out of which the necessary fractional quantity may be administered as a dose. The inconvenience of this mode of administration was at once apparent when a high fraction of a drop had to be administered, and Hahnemann's ingenuity devised a way which has removed this inconvenience as regards liquid medicines and has proved very useful. This is the invention of the globule of cane sugar with such a mixture of gum as to ensure the coherence of the globule. The size of the globule may be varied from a few, say 5 or 10, to 100, 200, 300 weighing a grain. So that if they are moistened with a drop of a liquid attenuation, by administering one or more, we may be sure of administering the medicine in doses varying from a fifth to three-hundredth of a drop. It will be evident that the globule is useful only in the administration of medicines which have been prepared in the liquid form. The globule, when so small as that 200 or more weigh a grain, was called pellet by Hahnemann.

The object originally, as we have seen, of the successive triturations and succussions, was the reduction of the dose, and hence they were called dilutions or attenuations. But seeing the development of medicinal powers by them in inert substances, he came to look upon the attenuations as potencies or dynamizations. But he could not get over the fact of the diminution of the mass of the original substance, and consequently he had to speak of them both as potencies and dilutions. And when he speaks of the dose, it is difficult to make out whether he means the potency or dilution, or the quantity of the potency or dilution which is administered to the patient. Thus when, in §275 of the *Organon*, he speaks of the suitableness of a *medicine* depending not only on its accurate homœopathicity, "but likewise on the proper size, or rather smallness, of the dose," and speaks of "*too strong a dose*" proving "injurious by its mere magnitude," he leaves us quite in the dark as to what he means, the quantity of the crude drug or of a particular potency? In the following section he is more clear when he says: "For this reason, a medicine, even though it may be homœopathically suited to the case of disease, does harm in every dose that is too large, the more harm the larger the dose, and by the magnitude of the dose it does more harm the greater its homœopathicity *and the higher the potency selected;*" and when in the note to this section he adds: "The praise bestowed of late years by some few homœopathists on the larger doses is owing to this, either that they chose low dynamizations of the medicine to be administered, as I myself used to do twenty years ago, from not knowing any better, or that the medicines selected were not perfectly homœopathic." Here evidently he made a distinction between the dose or the quantity actually administered to the patient and the dilution or dynamization out of which the dose was taken. But it is annoying and puzzling that a man of his precision of ideas should leave us in vague uncertainty as to what, according to him, constituted a large dose, a too strong dose,—whether a full drop, or several drops, of a particular potency?

In §278 he raises the question, "what is this most suitable degree of minuteness for sure and gentle remedial effect; how small, in other words, must be the dose of each individual medicine, homœopathically selected for a case of disease, to effect the best cure?" and answers it thus: "To solve this problem, and to determine for every particular medicine, what dose of it will suffice for homœopathic therapeutic purposes and yet be so minute that the gentlest and most rapid cure may be thereby obtained—to solve this problem is, as may be easily conceived, not the work of theoretical speculation; not by fine-spun reasoning, not by specious sophistry can we expect to obtain the solution of this problem. Pure experiment, careful observation, and accurate experience can alone determine this." In the next section (279) we are authoritatively told that "this pure experience shows UNIVERSALLY, that if the disease do not manifestly depend on a considerable deterioration of an important viscus (even though it belong to the chronic and complicated diseases), and if during the treatment all other alien medicinal influences are kept away from the patient, *the dose of the homœopathically selected remedy can never be prepared so small that it shall not be stronger than the natural disease, and shall not be able to overpower, extinguish and cure it, as long as it is capable of causing some, though but a slight preponderance of its own* *symptoms over those of the disease resembling it* (slight homœopathic aggravation) *immediately after its ingestion.*"

In these two sections (278 and 279) the dose means more than a certain small quantity of a dilution or potency. It includes the dilution or potency itself. This is corroborated by what he says in the following section (280): "This incontrovertible axiom of experience is the standard of measurement by which the doses of all homœopathic medicines, without exception, are to be reduced to such an extent that, after their ingestion, they shall excite a scarcely observable homœopathic aggravation, *let the diminution of the dose go ever so far, and appear ever so incredible to the materialistic ideas of ordinary physicians.*" This diminution of the dose could only be effected by successive dilution or attenuation by the processes peculiar to homœopathy (succussion and trituration) and not by the simple division of a drop of a particular dilution, as directed in §285, where he says: "The diminution of the dose essential for homœopathic use, will *also* be promoted by diminishing its volume, so that, if, instead of a drop of a medicinal dilution, we take but quite a small part of such a drop for a dose, the object of diminishing the effect still further will be very effectually attained." For which purpose he says in the note "it is most convenient to employ fine sugar globules of the size of poppy seeds, one of which imbibed with the medicine and put into the dispensing vehicle constitutes a medicinal dose, which contains about the three hundredth part of a drop, for three hundred such small globules will be adequately moistened by one drop of alcohol. The dose is vastly diminished by laying one such globule alone upon the tongue and giving nothing to drink." However vast the diminution may be, it must fall vastly short if the dilution, with which the globule is moistened, is further attenuated to a higher dynamization, and globules are moistened with the latter.

(To be continued).

INTERNATIONAL HOMŒOPATHIC CONGRESS, 1900.

We have great pleasure in drawing the attention of our readers and of all our colleagues throughout India to the following circular letter we have received from the Committee appointed by the Société Française d'Homœopathie for organization of the Sixth Quinquennial International Homœopathic Congress.

This forthcoming International Homœopathic Congress, in order to be really quinquennial, ought to be held in 1901. It had to be ante-dated by one year in order that it may form part of the grand Exposition Universelle to be held in Paris in 1900. Such being the case it is certainly a misnomer to call it a *quinquennial* Congress. The misleading adjective might well have been omitted out of regard for logic and fact.

But it is useless now to quarrel with our colleagues for the blunder made. We must see that the Homœopathic Congress, as one of the Official Congresses in connection with the Universal Exhibition to be held on French soil just in the very first year of the new Century, be a successful one, as it eminently deserves to be. Homœopathy is now a little over a century old, and its professors and advocates ought to exhibit to the world that as a therapeutic law it is based upon positive fact, and that it has not lost but gained strength by researches in the collateral branches of medical science.

We wish that at the Congress the limits of the law of Homœopathy be clearly defined. If we mistake not every Homœopathic physician from Hahnemann downwards, though theoretically denying any limit, does not hesitate to show his practical belief that the law has limits even in the treatment of purely medical cases. We all know that Hahnemann advised *Camphor* in pretty large doses in the first stages of cholera, and what was his explanation when he was criticized for recommending such unusual doses? He said, "the effect to be produced by Camphor is an Allopathic and not a Homœopathic one. A palliative action must at once be produced or the patient will die before the Homœopathic medicine has time to act." Another reason given by him was that Camphor vapor, according to this experience, was "the only trustworthy means of annihilating the probable animated miasma of Cholera." So even the father of Homœopathy did recognize other principles than homœopathic in the treatment of disease, and the success that attended such recognition amply justified it. Why should not we his disciples follow his example, and cast off for ever the stigma of bigotry?

The very first aphorism of his *Organon* is: "The physician's gh and *only* mission is to restore the sick to health." This exactly what the ancient physicians of our country taught upwards of three thousand years ago: "He alone is the true physician who can restore health." The physician must keep this end always in view, or he will be led astray by prejudices and partialities. And he must remember that the organism is governed by a variety of laws, which are not reducible to one grand law. Hence the disorders of the organism cannot all be remedied by the application of only one mode of drug-action, though it may be useful in the largest majority of cases. For the residual cases the physician must be wide-awake to find out other methods, or he will inevitably sacrifice the health and life of his patients to a favorite system.

ESTEEMED COLLEAGUE,

At the London Congress of 1896, it was decided that we should meet next time in Paris, and that the quinquennial gathering should be ante-dated one year, so as to make it coincide with the Exposition Universelle which is to be held in that city in 1900. The Société Française d'Homœopathie has accepted the task of organising the Congress, and has appointed the undersigned a Commission for the purpose. It has also obtained from the Management of the Exposition a place among Official Congresses meeting in connection therewith.

We therefore beg to inform you that the Sixth Quinquennial International Homœopathic Congress will assemble in Paris, at a date hereafter to be determined, but lying between July 20th and August 19th, 1900; and we earnestly solicit your co-operation in our work of preparation for it. We need essays for our discussions, and the presence of representatives of our system to conduct these to advantage. Will you be good enough to take such measures as you deem most suitable for interesting in our projected gathering the readers of your Journal and the Homœopathists of your country?

All information regarding the Congress will be published in good time in the French Homœopathic Journals.

With our fraternal regards, we remain, dear Colleague, yours most truly,

P. JOUSSET, *President*,
R. HUGHES, *Permanent Secretary*,
LEON SIMON, *Secretary*,
VICTOR CHANCEREL,
A. GONNARD,
MARC JOUSSET,
J. LOVE,
J. P. TESSIER,

P.S.—All essays and papers should arrive by January 1st, 1900, at the latest, and should be addressed to

24, Place Vendôme, Paris, France. DR. LEON SIMON.

REVIEW.

Key-Notes and Characteristics with Comparisons of Some of the Leading Remedies of the Materia Medica. By H. C. Allen, M.D., Professor of Materia Medica and the Organon in Hering Medical College and Hospital, Chicago. Boericke & Tafel, Philadelphia and Chicago, 1898.

With each addition to the Materia Medica the task of the homœopathic practitioner is becoming more and more difficult, indeed almost bewildering. And his occupation would have been gone had it not been for one comforting fact. Voluminous as the symptomatology of drugs is, to one who studies them with care they will be found to present certain features not many in number for each drug which are so characteristic as to distinguish it from the rest. It is these characteristic features which offer the greatest help in their selection. Indeed it is when we have a drug whose characteristic features correspond with similar characteristic features of a case of disease, that we have the right or true homœopathic remedy for the latter. Hahnemann laid particular stress upon this fact in sections 153 and 154 of the *Organon.* "In this search for a homœopathic specific remedy," says he, "that is, in this comparison of the collective symptoms of the natural disease with the list of symptoms of known medicines, in order to find among these an artificial morbific agent corresponding by similarity to the disease to be cured, the *more striking, singular, uncommon, and peculiar* (characteristic) signs and symptoms of the case of disease are chiefly and almost solely to be kept in view; for it is *more particularly these that very similar ones in the list of symptoms of the selected medicine must correspond to,* in order to constitute it the most suitable for effecting the cure." He very sagaciously observes that "the more general and undefined symptoms: loss of appetite, headache, debility, restless sleep, discomfort, and so forth, demand but little attention when of that vague and indefinite character, if they cannot be more accurately described, *as symptoms of such a general nature are observed in almost every disease* and *from almost every drug.*"

The principle thus laid down by Hahneman was perfectly sound, and quite consistent with the fundamental requirement of the similia simibus law, namely, the individualization of the disease and of the drug by the totality of their symptoms. A large number of his followers have attempted to improve upon him, and in their hands, the totality has degenerated into a single characteristic or "key-note." The late Prof. Henry N. Guernsey may be said to have been the inventor of the key-note system, and he defends it thus in his treatise on *Obstetrics:* "The plan of treatment may seem to some rather novel, and perhaps on *its first view, objectionable*, inasmuch as it may seem like prescribing for single symptoms: whereas such is not the fact. It is only meant to state some strong characteristic, which will often be found the governing symptoms, and on referring to the Symptom-Codex all the others will surely be there if this one is. There must be a head to everything; so in symptomatology—if the most interior or peculiar, or key-note, is discernible, it will be found that all the other symptoms of the case will be also found under that remedy that gives existence to this peculiar one, if that remedy is well proven." The assumption here made is too large for actual facts. We do not, however, deny the value of key-notes or characteristics provided a single symptom is not made the only basis of selection of the remedy.

Dr. W. H. Burt, taking the hint from Dr. Guernsey, brought out a *Characteristic Materia Medica*, in 1869, and dedicated the work to the latter as the originator of the characteristic or key-note system, and "in consideration," as he said "of the great benefit I have derived from your labors." He expressed this indebtedness in the preface more pointedly: "And while I have endeavoured to render this work representative of the practical experience of the whole profession, rather than that of a single man, I cannot here refrain from making special mention of Professor H. N. Guernsey's work on Obstetrics. Upon this, as will appear, I have depended more for characteristics, than upon any other." The number of drugs of which the characteristics are given is 196, distributed into 14 groups, each group having remedies which have most similar physio-pathological and pathogenetic symptoms. A second edition of the work was brought out in 1873 by Messrs. Boericke and Tafel.

Dr. Guernsey himself for two years before his death was "engaged in the production of a thoroughly practical Materia Medica, of convenient size, containing characteristic symptoms and key-notes of the principal remedies," which he did not live to publish, but which his son Dr. Joseph C. Guernsey published in 1887 under the title of *Key-Notes to the Materia Medica as Taught by Henry N. Guernsey*. In this work we have more than a few key-notes. There are pretty full outlines and leading characteristics of 191 drugs, under the same headings where practicable as those of Hahnemann, viz., Mind, Head, Eyes, &c. There are besides a useful Repertory under these heads, and a copious alphabetical index. It is not a little singular that in this work there is no reference or allusion to the previous work by Dr. Burt.

The work under review is, if we mistake not, the third of its kind. The author rightly observes in the preface, "we may judged from the small number of homœopathic physicians who rely on the single remedy, and the almost constant demand for a 'revision' of the materia medica, its study in the past, as well as at present, has not been altogether satisfactory to the majority." Hence, "an attempt to render the student's task less difficult, to simplify its study, to make it both interesting and useful, to place its mastery within the reach of every man or woman in the profession is the apology for the addition of another monograph to our present works of reference." Besides this allusion to present works of reference there is no mention of either Burt's or Guernsey's work.

As regards the comparative merits of these works we find that Guernsey's is the fullest. But strangely enough some of the symptoms, which Dr. Guernsey used to look upon as characteristics or key-notes in his *Obstetrics* and which were quoted as such in Dr. Burt's book on his (Dr. Guernsey's) authority, have been omitted in this book edited by his son. Thus, to take a single drug, Carbo Vegetabilis, the symptoms—"morning leucorrhœa; discharges very acrid, excoriating the parts; aphthæ of the vulva, with much itching, heat and redness; extraordinary rush of voluptuous thoughts"—are not found under that drug in the *Key-Notes*. In place of these which, with the exception of the last, are genuine pathogenetic symptoms, we have under Generalities (!) "menstruates too early." What led the author to abandon these, his own key-notes, is more than we can imagine. Such omissions are frequent, and detract considerably from the usefulness of the book.

There was thus ample necessity for a new work on the subject. Has Dr. Allen fulfilled that necessity? His book deals with 156 drugs, that is, a lesser number than are treated of in either Burt's or Guernsey's, though there are some in it which are not to be found in the latter; and the characteristics given are generally fewer. But there is one feature of the book for which we would recommend it to students and practitioners, and that is the comparisons between one drug and others analogous to it which are given in brackets. Thus under Carbo Animalis against the symptom "glands indurated," &c., we have (Con.); against the symptom "after appearance of menses so weak she can hardly speak," we have (Alum., Coc.); against "menstruation, leucorrhœa, diarrhœa are all exhausting," there is (Ars). This sort of comparison is very valuable and materially helps in the selection of the right remedy. These comparisons may be made more numerous, and we trust that in the next edition the author will give more characteristics and more comparisons.

The Construction of Hospitals for Consumption and other Infectious Diseases. By John W. Hayward, M.D., Formerly Vice-President, Liverpool Architectural Society; author of the Sanatory Necessities of House Building, &c., &c. Egerton Smith and Co. Liverpool, 1899.

Dr. Hayward is not only a distinguished member of our school who has advanced its cause by several works, among which is the splendid monograph on Crotalus; he is also a great authority in matters of sanitation and hygiene, on which he has written several works of great importance. The pamphlet before us is the latest from his pen, and is full of ingenious suggestions which "those, interested in the erection of Hospitals and other buildings which require both ventilation and warming," would do well to follow.

It is contended by European writers that hospitals are a Christian institution, that is, that hospitals properly so called never existed before the morality and religion of the world were revolutionized by the teachings of Christ. However this may be, it is a fact that hospitals for dumb animals did exist in India as the result of the teaching of another reformer, long before the birth of Christ. We are not certain if hospitals for men did exist in our country before the Christian era. At least this does not appear from our ancient medical writings. Were our forefathers afraid of congregating numbers of sick in one place? For cannot be the slightest question, as we said in our article c the "Medical College Hospital (Calcutta), and the Principles of Hospital Construction" so far back as February 1868: "Weighing the advantages with the disadvantages of congregating the sick in one place for convenience of treatment, this convenience apart, hospitals are a positive evil—and particularly so when the constitution of the atmosphere and of the soil assumes an epidemic aspect." This is borne out by the strong opinions expressed by Miss Nightingale, Sir James Simpson, and Prof. F. de Chaumont. Sir James Simpson and others have shown by statistics that the larger the number of patients, especially lying-in patients, crowded into a hospital the greater is the mortality. Hence Prof. Chaumont was constrained to say—"although hospitals have been intended as a blessing and benefit to the poor, they have too often proved the reverse. So much was this the case formerly that it has been not infrequently debated whether hospitals are or are not gigantic evils."

The causes of such unusual unhealthiness of hospitals are so obvious that it is surprising that they should have been overlooked in the construction of buildings designed for the care and treatment of the sick. Insufficient ventilation, insufficient light, insufficient arrangements for the removal of accumulating filth, want of regulation of temperature, want of adequate space for each patient, the mixing up of patients suffering from non-infectious and infectious diseases, not to speak of unsuitable food and over drugging,—these are the chief causes of unhealthiness of hospitals. And unless these are attended to, it is better far that no hospitals are provided for the poor. But there is no reason why these elementary principles of sanitation should be disregarded. We do not want magnificent structures for show but humble buildings where the poor may have cure from their diseases or at least relief from their suffering. Dr. Hayward has shown how this can be attained with economy. "The best of all disinfectants and germicides, as well as of tonics and restoratives, being fresh air and sunshine, provision should be made for the admission into the wards and the whole hospital of as much of these as possible—abundance of fresh air without draughts, and of sunshine without scorching. To provide for this the hospital should be of the pavilion form—this is, in wings or blocks; and the free ends should be square to the south-south-west, so that both sides may be exposed to the sunshine every day. The pavilion form is advisable also for convenience and economy in the nursing; for ventilation and for warming in cold weather."

It is a question whether hospitals should be more than one-storied. In our article mentioned before we gave our opinion strongly in the negative for the reason that "the lighter portion of the effluvia exhaled from the wards in the first storey will ascend and pollute the atmosphere of the second storey, and the heavier portion of the effluvia of the wards of the second storey will descend and pollute the atmosphere of the first storey." The evil pointed out here is particularly felt in tropical climates and when the atmosphere is still. But by taking advantage of the laws which regulate the pressure and expansion by heat of the atmosphere Dr. Hayward has been able to devise arrangements by which "the whole hospital and every individual ward will be efficiently ventilated all the year round, with cool air in summer and warm in winter, almost automatically; and without labour or cost, except for the warming furnaces; and with both ventilation and warming completely under control." These arrangements are illustrated by four plans which have rendered the ideas of the author clear and intelligible. The whole pamphlet is worthy of perusal even by those who have nothing to do with hospitals, but who want to live in healthy and comfortable houses.

EDITOR'S NOTES.

Dr. Arnold on Homœopathy.

We have great pleasure in reproducing the following from a letter of Dr. Thomas Arnold, the great historian and educationist to Dr. Greenhill, a pupil of his, dated the 18th September 1837—"I shall be anxious to hear what you think of Homœopathy, which my wife has tried twice with wonderful success, and I once with success enough to encourage me to try again."

Parietal Taken for Intra-Abdominal Tumour.

Glanteny and Fresson (*Bull. de la Soc. Anat. de Paris*, December, 1898) relate an important case where a well-known operator was about to undertake what he believed to be an ovariotomy. He found, however, that the tumour lay in the parieties. The mistake was detected during the process of enucleation, which was effected without difficulty. The tumour weighed 14 lb. 5 oz., and appeared to be a fibroma much softened by degenerative changes, for which reason it seems that it had been taken for a fluctuating ovarian tumour. The patient, a woman aged 54, had only noticed it for two years.—*Brit. Med. Jour.*, April 1, 1899.

Experimental Quinine Amblyopia.

Holden (*Archives of Ophthalmology*, November, 1898) has studied the pathological changes produced by injecting quinine hypodermically in dogs. Although the arteries were constricted no histological changes were noticed in the vessels of the nerve or retina, there being neither thickening of the vessel walls nor proliferation of the endothelium. The pathological process consists in a constriction of the retinal vessels, and particularly of the arteries, followed by a highly albuminous serous exudation into the nerve fibre layer, and a degeneration of the ganglion cells, together with their axis-cylinder processes, which become the centripetal fibres of the optic nerve. These changes were not prevented by the exhibition of nitrite of sodium.—*Brit. Med. Jour.*, Feb. 25, 1899.

Action of Bacteria on the Photographic Plate.

Percy Frankland (*Centralbl. f. Bakt.*, xxiv, No. 17) finds that ordinary dish cultures on gelatine or agar-agar—and more especially "streak cultures"—have distinct action upon the photographic film even at the distance of half an inch; and that when placed in immediate contact with the film in the dark, definite pictures of the growths may be obtained. This influence, probably due to the evolution of chemical volatile substances, cannot pass through glass; in the case of phosphorescent organisms, however, a distinct action through glass is noticeable. The writer thinks that this action of bacteria on the photographic film may vary in different species, and may thus become of importance in diagnosis. It remains to be seen whether other organised structures, vegetable or animal, can exert a similar influence.—*Brit. Med. Jour.*, Feb. 25, 1899.

Dangers in Preparing Drugs.

LINDE, (*Deut. med. Woch.*, No. 34, 1898) records the case of a chemist's assistant who was told to make some cantharides plaster. The patient was boiling cantharides in alcohol, and although he took every precaution he could to avoid injuring his eyes, the fumes coming from the boiling liquid must have been so saturated with the drug that in a few hour's time he was suffering from blisters on both corneæ. The patient sought medical aid, and on examination it was found that phlyctenular keratitis affected both eyes. Under strict antiseptic precautions the blisters healed in ten days. The second case is that of a man who had suffered from psoriasis for seven years, and subjected himself to a severe treatment with chrysarobin. The strength of the ointment was 1 in 4 with vaseline. The eyes began to be affected eighteen days after the first application of the ointment. There was disintegration of the corneal epithelium, with loss of sensation in the cornea. The patient was also suffering from nephritis. The most probable explanation of this case is that the patient rubbed his eyes whilst some of the ointment was still adhering to his fingers.—*Brit. Med. Jour.*, March 4, 1899.

Pessary 32 Years in Vagina.

BLONDEL (*Bull. et Mém. de la Soc. Obstét. et Gynéc. de Paris*, January 12th, 1899, removed with very great difficulty an old fashion-
cup pessary 2 and 9-10th inches diameter from the vagina of a very
ld woman who had suffered for some some time from abundant fœtid
nious vaginal discharge. It made a deep grove in the vaginal
ucous membrane. In an attempt to seize the free edge of the
trument the forceps was broken. At length a piece was chipped
A segment of the groove then exposed was found full of fungat-
tissue and very lacerable. By aid of a curved needle Blondel
a stout silk thread into the breach and over the outer side of
instrument. He then was able to draw it down, carefully detach-
adherent tissue bit by bit. Thus the pessary was at length
out without a hole being made into the rectum or bladder,
ill . the groove seemed to extend to the rectal mucous membrane.
a was a little hæmorrhage after the operation. The patient went
o and was no more heard of. She was 68 years old and the
had been introduced when she was 36, four years after her
nt.—*Brit. Med. Jour.*, April 1, 1899.

Cremation in England.

last annual meeting of the Cremation Society held at Gros-
on the 15th March last, Sir Henry Thompson, who was

in the chair, gave an address on the progress of that institution since its establishment in 1874. After detailing the various difficulties which the society had to overcome, Sir Henry stated that the first body cremated in the society's crematorium at Woking was that of a lady on the 26th March 1885, he then mentioned the following facts:

In that year the number of bodies cremated was three. In 1898 the number had risen to 240. Sir Henry Thompson then spoke of the efforts made by the society to bring about reforms in the present very loose system of death registration. The report of a Select Committee published in 1893 fully agreed as to the necessity for such reforms, but up to the present nothing has bean done to bring such reform about. Besides the crematorium at Woking others have been erected at Manchester, Liverpool, Glasgow, and Hull. With reference to examinations into the cause of death which are so necessary before the cremation of a body it was mentioned that Dr. Sidney Martin had accepted the post of pathologist to the society. Sir Henry Thompson concluded by referring to the question as to whether cremation should not sooner or later be made compulsory in all cases of death caused by acute infectious disease.

Fever Diet.

Klemperer (*Berl. klin. Woch.*, January 30th, 1899) summarises the various forms of treatment which have been in vogue at different periods in medical history. Hippocrates used to feed his patients on flour soup. A little later it became the fasion to give ordinary diet in cases of fever. In the Middle Ages the patient with fever was starved. In this century Graves in Ireland and Trousseau in France were among the first to suggest a nourishing diet in fever. In Germany, on the other hand, Senator forbade the use of milk and any nitrogenous food. It was only after Hösslin's reassuring experiments that an increase in fever diet took place. He showed that liberal diet was in no way harmful to the patient, and that it diminished the loss of weight which invariably followed a feverish attack. The increase in diet had no effect in raising the temperature as was formerly supposed. The author proceeds to state the causes of the increase of nitrogenous excretion in fever: (1) Increased consumption of albuminoid materials, (2) the cast-off cell protoplasm. If the supply of nitrogenous material is increased the the expenditure is also increased. Bauer has shown that part of the albuminoid food is retained; this, however, is not used in the reconstruction of the cells, but allays the hunger for albumen manifested by the cell protoplasm. About 2,500 to 2,800 calories are required in order to satisfy the craving for repair in the cell protoplasm. Milk is the best form in which this material can be supplied.—*Brit. Med. Jour.*, March 4, 1899.

Cyanide of Mercury and Diphtheria.

Several conspicuous persons in New York have lately been poisoned by cyanide of mercury. One of them, Mr. Henry C. Barnett, to whom the poison was sent disguised as Kutnow's powder, after taking a portion of this, immediately became ill, and was treated for a mild attack of diphtheria. That he was so suffering the result of the culture examination proved. He left his bed earlier than the doctor advised, and died of heart failure. This is very interesting to those conversant with homœopathy, for we know that Dr. von Villers employed cyanide of mercury with great success in diphtheria, and he was led to its selection by the report of a case of poisoning by this salt when the patient's fauces were covered by an exudation precisely resembling the diphtheric membrane. The mild attack of diphtheria following the ingestion of the poison in Mr. Barnett's case is said to have been proved to be diphtheria by culture examination, which we suppose means that the diphtheria microbe was found. So that we must infer that the diphtheria of cyanide of mercury has not only the characteristic false membrane, but the special microbe commonly observed in diphtheria arising from natural causes. This would show that it is not the microbe that causes diphtheria, but that the omnipresent microbe finds its appropriate locality for its development in diphtheria produced by the mercurial salt. Any way, the case of Mr. Barnett affords a striking corroboration of the homœopathicity of cyanide of mercury to diphtheria, and should ensure our trust in it as a reliable homœopathic remedy for this disease, in which indeed it has so often been successfully employed by allopaths as well as by homœopaths.—*Monthly Homœopathic Review*, March 1899.

Tuberculosis not Catching.

The Homœpathic Recorder of 15th March quotes the following from the *New York Medical Journal* shewing that consumption is not "catching" but "runs in families":

Weber, in an article on The heredity of Tuberculosis (*Journal des praticiens*, January 21st), cites a case reported by Beugnies as an example of "oblique heredity," which seems to be the same thing as Sedgwick's indirect atavism. A young girl was seduced and gave birth to a child. Both the child and its father soon died of tuberculous disease. Then the girl, herself strong and healthy, married a healthy and vigorous man. Four children were born to them. The first, second, and third died of tuberculous meningitis. The fourth, a girl, was born healthy, grew up, and married a healthy man. All the children that she bore were affected with tuberculous glands.

The family of the Mills is another well-known instance in point. James Mill, the great historian and philosopher died of pulmonary phthisis at the age of sixty-three leaving four sons and five daughters. The eldest daughter and all the sons died of consumption and none left children to continue the name. The eldest son, the celebrated John Stuart Mill died at the age of sixty-nine the immediate cause of his death was a local endemic disease caught at Avignon. The second son could not escape from his father's disease though he came out to India and spent years here. The third, the most favourite brother of John Stuart, died at Falmonth in his nineteenth year. The youngest, whose chest was also naturally weak, became worse after an ill judged walking tour in Switzerland, and died at Madura in 1853. The remaining four daughters were married and three had children.

The Size, Form, and Position of the Stomach.

G. ROSENFELD (*Centralbl. f. inn. Med.*, January 7th, 1899) records his clinical investigations into this subject. It is customary to describe these features of the stomach in reference to the umbilicus, and yet the position of the latter is not constant. Rosenfeld suggests for this purpose the following lines: One connecting the tips of the tenth ribs, another connecting the highest point of the iliac crests, and a third joining the anterior superior spines. He finds that two-thirds of the lesser curvature of the stomach not only occupies a vertical position, but even slants towards the left; whereas the remaining one-third towards the pyloric region has a horizontal position, or even slopes upwards. Thus the position of the stomach is vertical as regards the cardia, and horizontal in its pyloric portion. The moderately-filled stomach differs from this position in that it is directed more to the front. From this normal position there may be, several deviations. Rosenfeld does not believe in gastroptosis without dilatation. The stomach which shows the position of the pylorous and pyloric antrum to be lower than usual is practically always dilated. The different forms of dilatation may take place in a vertical or horizontal direction, or there may be an intermediate form between these two. After discussing the various methods in use for ascertaining the size, shape, and position of the stomach, the author describes his own method—a soft tube charged with shot is introduced into the stomach. It penetrates to the deepest parts. This tube is made visible by the Roentgen rays. Now if air is introduced through the tube, the upper part of the stomach, and then its deeper parts, are distended. As the air offers no resistance to the rays, the whole stomach is shaded out with much sharpness. The lesser curvature and pyloric region may be less distinctly seen, but even this difficulty may be overcome. The examination is not to be recommended when the stomach is full, as too much vomiting is produced.—*Brit. Med. Jour*,, March 18, 1899.

The Serum of Sobriety.

If anyone wished to embody the most striking feature of the therapeutic "movement" of the day in a classic formula, he would—if he cared to use the licence of the "higher criticism" and give the words a meaning undreamed of by the author—find one in Ovid's phrase, *Sero medicina paratur.* In our battles against disease we conquer in the sign of Serum. Such virtue has this elixir that by means of it—if we are to believe the prophets of the New Medicine—we can make ourselves "immune" against the invisible foes which go up and down the world seeking whom they may devour—including, it may be presumed, the "microbe of death" not long ago run to ground in a Transatlantic laboratory. But this is not all. Serum, it appears, if the right "brand" be used, will also "immunise" us against moral disease. For instance, if we wish to render ourselves proof against inebriety, so that even after taking the pledge we shall feel no temptation to subdue our inordinate sense of our own virtue by a corrective dram, we need only submit to a few injections of a serum prepared by Dr. Evelyn, of San Francisco. This serum is extracted from a horse previously made suitable for the purpose by a course of alcohol. The noble animal has from two to fifteen pints of whisky administered to him daily for three months. At the end of that time a serum can generally be obtained which, inoculated into the most confirmed toper, at once leads him to ask for a "blue ribbon.'' The serum is preventive as well as curative; we are told that a child immunised with it is protected against drunkenness for the rest of his days. Thus may the virtue of temperance inoculate our stock and Dr. Dawson Burns find his occupation gone. Dr. Evelyn calls his precious serum "equisine." We venture to suggest that he might next turn his attention to the treatment of folly. He could doubtless extract an appropriate serum from an animal nearly related to the horse. There is a large field for the therapeutic use of "asinine" at the present day, and the ingenious American physician might begin with the patients who have been through a course of his "equisine."—*Brit. Med. Jour.*, March 18, 1899.

Cancer in Animals.

It used to be believed that animals are not liable to cancer, and Dr. McFadyean, in his paper on "The Occurrence of Cancer in the Lower Animals" (p. 456), says that not long ago a distinguished pathologist asserted that the disease is peculiar to the human species. How erroneous this belief is may be gathered from Dr. McFadyean's paper, in which particulars are given respecting sixtythree cases of cancer in domesticated animals which he has had an opportunity of examining. It is somewhat curious that the only one of the domesticated species not represented in his table is the pig, which used to be considered by the ancients as approaching most nearly to man in its anatomical structure. Galen's anatomy is almost entirely founded on the examination of pigs, and in the Middle Ages, almost to the time of Vesalius, lectures on the anatomy of the human body were illustrated by

> "Dissections made on the bodies of swine
> As likest the human form divine."

Dr. McFadyean's investigations suggest some interesting points of contrast between animal and human cancer. The rarity of cancer of the uterus and the mammary gland in animals is particulary remarkable. He has never seen a case of cancer of the uterus or of the udder in a cow, and, as he says, the immunity of the latter organ is difficult to reconcile with the theory that carcinoma of the human breast is ætiologically connected with the irritation incident to lactation. Another circumstance that seems to negative the influence of irritation, which is supposed to be so potent a factor in the production of human cancer, is the fact that, while carcinoma is by no means rare in the horse, in not one of the cases in Dr. McFadyean's table was the starting-point of the disease in any of the parts of the body most subject to friction. Thoroughgoing partisans of the irritation theory may indeed explain the rarity of cancer of the tongue in animals by the fact that our "poor relations" do not smoke! "Irritation" is such a convenient hypothesis, and your destitute theorist will find a "fact" to support him in anything.—*The Practitioner*, April, 1899.

An Improvement in X-Ray Techhique.

We have had an opportunity of witnessing the results obtained with a new "break" for the induction coil which has been installed in the *x*-ray department of Charing Cross Hospital, under the direction of Dr. Mackenzie Davidson. The effect as we observed it in screen work was exceedingly good, the light being steady and the definition very fine. The new device has been introduced by Dr. Wehnelt, of Charlottenburg. It has been known for a long time that a strong current passed through an electrolyte will become intermittent or interrupted, and produce a note—sometimes a shrill one. It occurred to Dr. Wehnelt to use this as an "electrolytic break" for the induction coil. The apparatus consists of a cell filled with sulphuric acid and water, the specific gravity of the mixture being about 1205. A sheet of platinum foil (such as is used in Groves cell) is the cathode or negative plate in the cell. The anode or positive consists of a small platinum wire fused into the end of a closed glass tube, and contact inside the tube is made by a little mercury and copper wire dipping into it. This is immersed in the fluid. This cell is interposed between a 100-volt current and the primary terminals of an induction coil. When the current is turned on violent electrolysis takes place, a more or less shrill note is produced according to the size of platinum point, and a thick ribbon-like discharge is produced at the secondary terminals. The method promises to be very useful. The Crookes tube is brilliantly and steadily illuminated and the fluorescent screen gives such an effect as is seen when a large Wimshurst machine excites the tube, but it is more brilliant, and photographic exposures are greatly shortened; the difficulty will be to get tubes to stand the current, and already the anodes of several tubes have been melted. Osmium is not disintegrated, but soon becomes white hot, and the vacuum alters rapidly under the intense bombardment. The primary of the coil used at Charing Cross Hospital took from 3 to 10 amperes, according to the size of the platinum wire used in the cell. No "hammers" or condenser is required, and a point of importance seems to be that this "electrolytic break" is very sensitive to any change of resistances in the secondary discharge, and reacts accordingly without the sudden jerks usual with the "hammer break."—*Brit. Med. Jour.*, March 4, 1899.

Martyrs of Science.

Dr. Angelo Knorr, *Privat-docent* in the Veterinary School of Munich, died on February 22nd, from acute glanders, contracted in the course of an experimental research on mallein. Before going to Munich, Dr. Knorr had been senior assistant in the Berlin Institute for Infectious Diseases, and he was afterwards assistant in the corresponding institute at Marburg. He was a young worker of the highest promise, and had done good work in regard to tetanus infection. This death recalls some other tragic occurrences of the same kind which have taken place in recent years. Helman, the Russian investigator who discovered mallein, himself fell a victim to accidental inoculation of the glanders virus. Some time afterwards another Russian, Protopopow, died of glanders contracted in a French laboratory. An Austrian physician, Dr. Koffmann-Wellenhof, died of the same disease, contracted in the Institute of Hygiene at Vienna. On January 17th of the present year Dr. Giuseppe Bosso, of the University of Turin, died of infection contracted in the course of cultivations of tubercle bacilli made in his laboratory. Not long before Dr. Lola, assistant in the maternity department of the Czech University Hospital of Prague, died of tetanus caused by an experimental inoculation made on himself. Some fourteen or fifteen years ago a medical student of Lima proved that "verruga Peruana" is an infectious disease by inoculating himself with it, an act of scientific devotion which cost him his life. Only this week we have to record that Major J. F. Evans, of the Indian Medical Service, has died of plague contracted while conducting a *post-mortem* examination. There are doubtless others who have fallen on the same glorious battlefield, but *carent vate sacro.* Besides those who have died, there are many who have only escaped with their lives after long and painful illness. Professor Kourloff contracted anthrax in a laboratory at Munich, and was saved only by vigorous surgery. Dr. Nicolas supplied, in his own person, the first example of tetanus produced in man by inoculation of the pure toxin of the bacillus of Nicolaïer. John Hunter inoculated himself with a loathsome disease, and a London physcian now living incurred the same penalty in the cause of science. Morton nearly killed himself with sulphuric ether, and Simpson more than once risked his life in experimenting with unknown anæsthetics. Let these facts—and with a little trouble the record could be made much longer—be remembered when antivivisectors taunt investigators with not daring to make experiments on themselves.—*Brit. Med. Jour.*, March 18, 1899.

The Remedies for Flatulence.

According to Stonham, of London, there are a great number of remedies useful for flatulence, but six stand out pre-eminently, viz.; carbo veg., bryonia, lycopodium, china, argentum nit., and nux vomica. It will be useful to differentiate a little between them.

With *carbo vegetabilis* there is much distention and full feeling, so much so that the stomach feels very heavy and as if hanging down, and the abdomen full and bursting. The flatulence seems equally distributed to stomach and bowels, and large quantities of flatus are passed both upwards and downwards without effort and without relief —the flatulence does not by its presence excite painful spasmodic action in the gastro-intestinal muscular walls.

With *china* the bloated, distended feeling of the stomach is accompanied by eructations which are bitter, or taste of food, and by belching, which does not relieve; and there are spasmodic constrictive pains in the abdomen. The bloated feeling is relieved by motion (the reverse of bryonia). China is especially useful in cases caused by excessive tea-drinking or by depletion of the system, and the spasmodic pains are usually worse at night. It seems to be more related to an exhausted nervous system than the other flatulent remedies.

With *argentum nitricum* the flatulence is mainly confined to the stomach; there is belching after every meal, but it occurs with difficulty, as though there were a resistance to be overcome at the cardiac orifice, which is finally overpowered with the discharge of flatus in large volumes and with great violence.

With *bryonia* there is much distention and great sensitiveness of the abdomen, confined mostly to the upper part; there are stitches and other pains, which hinder respiration: the symptoms are worse from any movement, however slight; hiccough and eructations come on immediately after food; the eructations relieve.

With *lycopodium* there is not much flatulence in the stomach, but a great deal in the intestines, especially in the colon. It becomes incarcerated, and causes pressure upwards on the diaphragm, with a sensation as if a cord were tied around the waist, and downwards on the rectum and bladder. There is much rumbling of wind in the splenic flexure of the colon, and great fermentation in the abdomen, with rumbling and croaking, colic and a discharge of quantities of flatus per anum. It is, on the whole, our most useful remedy for intestinal flatulence.

With *nux vomica* the epigastrium becomes bloated, but not till two or three hours after a meal, and there is a pressure as of a stone there; there is also some pressure under the short ribs. There may be a good deal of spasmodic colic and pressure downwards, and ineffectual urging to stool. There is more colic and less distention than in lycopodium, which it most closely resembles.—*Journal of Brit. Hom. Society* quoted in *Hahnemannian Monthly* for March 1899.

CLINICAL RECORD.

Indian.

Cases of Intestinal Obstruction in the Horse.

BY DR. W. YOUNAN, M B., C.M., (EDIN)

There are some who believe that so large an animal as the horse cannot be affected by the high homœopathic potencies. English veterinary homœopaths, for instance, are in the habit of using the lowest potencies in their practice, and veterinary text books invariably teach a very crude Homœopathy. But if we would only remember that homœopathic medicines act qualitatively and not quantitatively, and that the lower animals have nearly as marked individual differences of constitution as the human subject, we should easily understand that no difference in therapeutics need exist.

A well-known veterinary surgeon of this city was prevailed upon by me some years ago to adopt Homœopathy. He has been quite in love with the new therapeutics ever since, and has repeatedly told me how much "messing about" his poor animals have been saved. On more than one occasion he has consulted me in difficult cases, and from analogy with the human subject I have been able to direct a correct prescription. I well remember two cases of intestinal obstruction in the horse which I give below.

CASE I. The first was an animal which I had been using for some time and which was suddenly seized one evening with symptoms of intestinal colic. I sent it to the veterinary infirmary at once and went to see my friend the veterinary surgeon the following morning. He told me that the horse had been labouring under colic the whole night in spite of all the remedies he had administered and had become very exhausted. Unless speedy relief was given the animal had not long to live. Watching the dumb patient for a few minutes, I asked my friend to administer a dose of Belladonna. He happened to have the 30th potency in small globules and five or six of them were put into the animal's mouth. I directed that if no relief came in two hours, a second such dose was to be administered. This dose was administered, and shortly after the bowels were moved with a great effort, and the intestinal obstruction was forthwith relieved. When I called in the evening I was shewn the fœcal mass that had passed, and it was interesting to note the thick strings and bands of mucus which had completely enveloped the obstructing matter. The animal was kept on green diet for a day or two and had no further trouble.

CASE II. The next case was still more interesting and happened about a month or so after.

I was calling one evening on my friend the veterinary surgeon and he asked me to see a very valuable horse that had been brought to the infirmary that very morning. A number of remedies, including Belladonna, had been administered through the day, but the animal was going from bad to worse, and when I saw it about 8 o'clock my friend told me that he had written to the owner to say that no hope could be entertained of the horse's recovery—no pulse could be felt at the jaw—the breath was very fetid and the animal quite exhausted. I pointed out the resemblance in this case to the stage of intestinal obstruction in the human subject known as paralytic, and I explained how in opium we had a medicine which produced a similar condition pathogenetically. My friend's medicine box happened to contain opium 30 in small globules and five or six of them were administered in one dose without delay. I stayed to dine with my friend and at 9-30 P.M. we visited the patient together and felt very disappointed to find no change at all for the better. A second dose of the same magnitude was administered and I left for home. Next morning curiosity took me to see the patient and my friend the veterinary surgeon met me at the gate smiling—"you deserve a consultation fee for yesterday's case" he said, "the animal is feeding this morning." More surprised than I cared to express I learnt that shortly after the second dose of opium the intestinal obstruction was relieved, an enormous mass of fœcal matter completely covered with tough stringy mucus having passed. In two or three days this valuable horse, which had been pronounced by a leading veterinary surgeon to be beyond the reach of medicine, was restored to its delighted owner quite well.

These two remarkable cases illustrate the wonderful action of the homœopathic simillimum in a very infinitesimal dose in so large an animal as the horse, and should be, I think, sufficient to remove any misconception from the minds of those who believe that the dose should be proportioned to the size of the patient.

Foreign.

Carbolic Acid in Pneumonia.

By P. Proctor, L.R.C.P. Edin.

This agent, which occupies so prominent a place in modern medicine and surgery, has been so exclusively regarded in its antiseptic character, that its bio-dynamic action, to coin a useful word, has been almost entirely lost sight of by both homœopath and allopath, and it certainly has not received at our hands the attention that it deserves as a protoplasm poison, and therefore under suitable dosage a medicine of power. With the exception of two or three minor cases reported by Dr. Hughes there is little or no reference to it in our literature. This may possibly be owing to the fact that our knowledge of its physiological action is limited to the effects either of overpoweringly poisonous quantities or of provings with attenuations, medium doses not having been tested. Yet a protoplasm poison of such activity must possess properties that are available for homœopathic uses if we only knew its specific character as a disturber of the vital functions in a moderate degree corresponding to the forms of disease commonly met with.

In reading over the carbolic acid chapter in the *Cyclopædia of Drug Pathogenesy*, wherein we get what is known both of symptoms and morbid anatomy, one cannot fail to be struck with the uniformity and the intensity of the action of this agent on the lungs in all fatal cases. Engorgement with dark, blackish, venous-looking blood, with subsequent bronchial irritation when sufficient time has been allowed during life, is the invariable condition. This state prevails generally, involving heart, lungs, liver and kidneys in one destructtive operation. Fatty degeneration and hæmorrhages are also to be found.

The entire process singularly resembles the effects of phosphorus, and in one case, No. 7, recorded in the *Cyclopædia*, the parallel to phosphoric poisoning in microscopic appearances is pointed out by the reporter. Blood decomposition, hæmorrhages, engorgement of abdominal and thoracic viscera, and fatty cell-degeneration show a pretty close correspondence between these two active substances. Differences between them will appear on closer examination. The inflammatory action does not rise so high with carbol. acid, and there is more venous stasis than with phosphorus, which latter presents us with *post mortem* appearances—where the blood is dark red and the stainings and hæmorrhages partake of this more oxygenised character. Taking the *post-mortem* appearances altogether, and the symptoms during life, a very vivid impression is left on the mind that carbolic acid is to phosphorus what venous is to arterial blood, and the tissue irritations bear a corresponding relationship, the same sphere of activity being to a great extent common to both drugs. Having this impression imprinted on my mind, I waited for a suitable case in which to put the analogy to practical use.

An opportunity presented itself in the spring of last year, in the case of a lady of 68. She was of decidedly bilious temperament, and had been treated for enlargement of liver the year previously. She was pale and thin, and mentally depressed by reason of family troubles, and in no condition to meet the strain of a severe illness. Her attack began with an affection of the colon, which was treated with enemata and medicine under an allopathic practitioner. The case dragged on, and consulting physicians were called in, but the patient got gradually worse, and at the end of some four or five weeks her state became so critical that I was called in to try what a change of treatment could do. I found the heart failing and a feeble, intermittent pulse, a state of utter prostration and a serious derangement of digestive organs and liver. The condition of the circulation called for immediate attention, and under digit. and strophanthus the heart gradually resumed strength and regularity. Then the abdominal organs received attention, and with the help mainly of nux vom., a normal state of things was brought about; but as this part of the case does not bear upon the subject of this article, no more need be said than that our efforts seemed to be rewarded with success, and the patient to be on a straight course to recovery.

This, however, was not to be her good fortune, for in about a fortnight a low form of pneumonia gradually set in, beginning at the right base and involving the lower half of the lung. There was no great rise of temperature, but the weak heart showed signs of distress again. The expectoration showed a tendency to prune juice colouration, and in a few days became hæmorrhagic, dark coloured and copious. To meet this new development the usual medicines were resorted to, but, to my surpise, without making any decided impression. Arsen., phosph., iodine, laches., ant. tart., sang., were employed in varying dilutions in the above order, but the symptoms showed no abatement, and at last we were face to face with another critical state of the case. Being called out late one evening after a rather larger hæmorrhagic expectoration than hitherto, I felt that something else was called for, and in thinking over what that something might possibly be, the picture of carbolic acid in the Cyclopædia came to mind. Forthwith the acid carbol. liq. B.P. was procured, and one drop administered in water every three hours.

It should be mentioned that during the treatment with the acid, no other medicine on any account whatever was given, so that the effect may be regarded as due entirely to the single medicine. In the course of 24 hours some improvement was manifest, in 48 hours it was decided, and in three days the blood had disappeared entirely. Concurrently the temperature went down, rusty sputum again made its appearance, and the consolidation began to yield. The carbolic acid was continued every four and then every six hours in the same dose of the pure acid. Finally it was given for some days in the first decimal until all necessity for it seemed to have passed away. The attendants thought the hæmorrhagic expectoration had been merely suppressed, but it was effectually cured and the lung cleared up completely.

The patient got well and was able to leave home for a change when the hot weather came, and at the present is in the enjoyment of her usual health.

It should be mentioned that carbolic acid agreed extremely well with the patient, no untoward symptoms appearing, and the appetite improved under it.

One word I would add in conclusion, to suggest that the pneumonic complications of typhoid present just such a group of symptoms as seem likely to correspond to this remedy, and it is probable that typhoid as a whole may come to be regarded as within the sphere of this acid on homœopathic lines, for many points of resemblance strike one on turning over the beforementioned article in the *Cyclopædia.* The undoubted value of the drug in allopathic hands lends probability to the suggestion that it acts in that disease as a dynamic agent and not merely as a germicide. If it should possess the medicinal virtue in addition to its germicidal property it would become, not less, but doubly acceptable to us.—*Monthly Homœopathic Review,* Feb. 1899.

Gleanings from Contemporary Literature.

A REPORT OF CASES.

Treated in the Massachusetts Homœopathic Hospital, October, November and December, 1898, in which the Roentgen Rays Furnished Invaluable Aid, either in Diagnosis or as a Guide in Operation.

BY HORACE PACKARD, M. D., ATTENDING SURGEON, BOSTON, MASS.

In recent changes and improvements in the surgical department of the Hospital, a room has been set apart for, and equipped with, apparatus for making x-ray exposures. This has proved of such material aid in the diagnosis of special cases, and has aided so materially as a guide in the performance of some operations, that were we now deprived of the use of this adjunct we should feel we had lost an invaluable aid in efficiently conducting the surgical work of the Hospital.

At this late date, three years after the discovery of the x-ray by Prof. Roentgen, it is unnecessary to dwell upon the importance of the discovery and the great advance which it marks in the field of surgery.

In order to preclude any confusion of terms I will briefly allude to the special characteristics of the x-ray. We think of the processes employed surgically as a kind of photography. This is in a measure correct. In photography the dry plate is acted upon by reflected rays of refracted light which reach it through an interposed glass lens. With the x-ray on the contrary, there is no known substance which reflects or refracts it. It passes directly through substances which heretofore have been considered opaque. Little or no obstacle is offered to the penetrating rays of this form of light by any of the soft tissues of the body, wood, aluminum, surgical dressings, clothing, shoes, hair, finger nails, gall stones, vesical calculi fæces, etc. On the contrary gold, silver, iron, steel, brass, copper, bones and the various minerals present an impenetrable barrier.

The x-ray produces the same change in the silver salts of a dry plat that is wrought by sun-light. The mode of utilizing this form of light i obvious. The portion of the body under scrutiny, where we suspect a fracture, dislocation, bullet, or needle, is interposed between the x-rays an a photographic dry plate. The rays pass through the soft parts, skin muscles, tendons, nerves, cartilages, and blood-vessels, or at most are bu slightly obstructed, while the bones or any metallic foreign body are impenetrable. The result, after development of the plate with the usua photographic chemicals, and on making a solar print therefrom, is a silhouette of the bones, bullet, or needle, with perhaps a faint shadow *en mass* of the surrounding soft parts. It is obvious that this is not the photography of reflection and refraction. It is simply and solely a silhouett

To more accurately define the process and the result the terms radiography and skiagraphy, radiograph and skiagraph are employed.

APPARATUS USED IN THE HOSPITAL.

The x-ray apparatus which has been employed in the cases about to be reported, was made and installed by the Assistant Pathologist Dr. T. R. Griffith.

It employs a primary alternating current of 104 volts and about 8 amperes, which is conducted through a transformer consisting of a coil wound with two layers of No. 10 wire in the primary, and six pounds of No. 36 in the secondary. (Ruhmkorff coil.)

The secondary current from the transformer is passed into a condenser formed of tin foil laid on glass plates and immersed in linseed oil.

In shunt with the condenser is another coil consisting of one layer of four turns of copper foil, one inch wide for a primary, and one layer of about three hundred turns of No. 40 copper wire for a secondary, which is placed inside the primary, with one inch space between the coils. The whole is immersed in linseed oil. The circuit of this latter coil is interrupted by a spark gap, and the current used is the discharge from the condenser.

The secondary current induced in this coil is of very high potential and is passed directly into the Crookes' tube for the generation of the x-ray. The tube is of the double reflector type.

This instrument is the result of patient and persistent experimentation on the part of Dr. Griffith, dating from the earliest exploitation of this new form of light.

It possesses penetrating power so great that an exposure on a Carbutt plate of fifteen seconds is sufficient to secure a most excellent skiagraph of the bone of the hand or forearm.

It will be observed that one of the cases reported involved the passage of the rays through the entire trunk with an exposure of one minute, fifteen seconds, with the result that a bullet is clearly shown lodged in the left lumber region near the spinal column.

CASE NO. 1 BULLETS IN THE THORAX.

Capt C., commander of an ocean going vessel, was the victim of a shooting affair from the hands of his drunken steward.

He was shot from the rear, and two bullets entered his body. One could be distinctly felt beneath the skin in the region of the right scapula. The other entered at the posterior border of the left axillary space, and passed slantingly downward and forward.

He presented himself for the removal of the bullets three weeks after the accident; the wounds were entirely healed.

Immediately after the shooting he expectorated blood. The skiagraph was made by Dr. Griffith which showed the location of the deep bullet within the thorax directly in the cardiac region. The superficial bullet over the right scapula was easily removed. The other was sought by making an incision through the skin and muscles overlying the location of the bullet, and exploring with a needle between the intercostal spaces. It was deemed unwise to proceed further than this for the following reasons:

1st. The bullet had become harmlessly imbedded within the thorax and was causing little or no trouble.

2nd. It evidently penetrated the lung at the time of the accident, as evidenced by the expectoration of blood.

3rd. If now imbedded in the lung, as seemed probable from the skiagraph, resection of a rib, opening of the pleural cavity, and incision of the lung would be the procedure required, but hardly warranted by the circumstances.

The wounds healed kindly without suppuration and within three weeks the captain was again on the quarter deck, in command of his vessel.

CASE No. 2. BACKWARD DISLOCATION OF THE ULNA.

Mr. P., aged 68, a patient of Dr. N. M. Wood, of Charlestown, presented himself at the Hospital with the history of a fall down stairs and injury of the arm.

Inspection and palpation fairly conclusively demonstrated the character of the injury, but the skiagraph showed dislocation of the ulna and exposed the exact malposition.

This has been deemed one of the most difficult dislocations to manage, from the fact that with the loss of the retaining force of the anterior ligament there is little opposition to recurrence of the dislocation, even after it has been well reduced. In this case nothing can illustrate better the advantage of extreme flexure. With the elbow in this position, and bound to the thorax with a wide roller bandage, perfect retention was effected.

CASE No. 3. RIFLE SHOT WOUND OF THE ABDOMEN.

Master B., a youth of 15, was hurried into the Hospital by Dr. A. G. Howard of West Roxbury. He was brought in the ambulance about 7 o'clock in the evening in a state of collapse, countenance pallid, pulse 150. He bore a bullet wound in the left lumbar region, from which blood was slowly oozing. He had been accidentally shot by a companion that afternoon about 4 o'clock, with a 22 calibre Winchester rifle at short range.

Without any delay whatever, he was anæsthetized and the abdomen was opened along the left linea semi-lunaris. The abdomen was full to overflowing with blood. The patient rapidly sank in the process of cleaning out the clots, and in spite of intravenous salt infusion and subcutaneous stimulation with strychnia, he expired upon the table.

It was readily demonstrated that the bullet had wounded the kidney, the lower margin of stomach, and become buried in the muscles of the lumber region near the spine.

A skiagraph taken after death, shows the exact location of the bullet. In this case the use of the x-ray was of no practical value except as again demonstrating its wonderful accuracy in locating foreign bodies within

It is a source of regret that this case could not have been subjected to operation more promptly after the accident. So large loss of blood, estimated at four quarts, precluded all possibility of saving the patient's life. Six hours had elapsed since the shooting occured. The hemorrhage had taken place from the renal artery. The exploration demonstrated that the bleeding could have been readily stopped had the opportunity offered earlier.

It may be pertinent to suggest in connection with this case that valuable time is often lost in waiting for an ambulance. There are very few emergency cases which cannot be safely transported in an ordinary carriage, and with the saving of about one half the time which would otherwise be consumed in waiting for an ambulance to come from a distance.

CASE NO. 4. SUPRA-CONDYLOID FRACTURE OF THE LEFT HUMEROUS.

The patient, a little girl, of 8 years, injured the arm as a result of a fall from a wheelbarrow. Her physician, Dr. J. F. Bothfeld, of Newton had it skiagraphed, which showed an overlapping of the fragments and failure to maintain apposition.

When the case came under my observation, it was found impossible to repose the fragments. The end of the upper fragment impinged so closely upon the joint, that it was impossible to flex the elbow much beyond an angle of 45 degrees. A longitudinal incision was made just above the inner condyle, with the idea of exposing the fractured ends and reposing them. It was impossible to do this, hence the only recourse left was to cut away the overlapping portion of the upper fragment, which involved about three-fourths of an inch, and push the lower into apposition with a freshened surface of the bone above. The arm was then fixed in extreme flexure, and the wound closed. Healing followed without suppuration.

Later the joint was again skiagraphed which gave evidence of excellent repair, but indicated that a slight decrease of flexure would give better alignment. This was easily effected, and at the present writing the prospect seems excellent for good union and a useful arm.

CASE NO. 5. REMOVAL OF BULLETS.

Mr. C., a patient of Dr. G. A. Tower, of Watertown, was the victim of a shooting affair from the hands of an intoxicated employee.

Two bullets entered his body from a 32 calibre revolver, fired at short range. One was removed from his wrist by Dr. Tower before he entered the Hospital. The other was buried somewhere in the structure of his neck, as evidenced by a bullet wound on the outer side of the left sterno-mastoid muscle.

A skiagraph shows the bullet embedded in the posterior muscles of the neck, about three-fourths of an inch from the transverse processes of the third cervical vertebra. An incision was made at about the middle of the lateral aspect of the neck, and by separating the muscles with finger dissection, the bullet was fairly easily reached and removed. Both wounds healed without suppuration.

CASE No. 6. SUPERNUMERARY TOE.

The following case, although not aided materially in its management by the x-ray, serves to illustrate how perfectly malformations which include change in outline of bone, as well as soft parts, may be made visible to the eye.

The supernumerary toe was cut away, the spur of bone smoothed carefully, and the wound closed immediately, which healed without suppuration.

CASE No. 7. COLLES' FRACTURE.

Miss H., patient of Dr. G. F. A. Spencer, came to the Hospital with a two weeks old injury of the wrist. Her physician feeling somewhat anxious as to the true character of the trouble referred her to the Hospital for advice.

A skiagraph, showed at once and without question that she had suffered a fracture of the lower end of the radius. (Colles fracture.)

How perfectly such an exposition, as is thus given, shows the mechanical changes incident to a Colles fracture. The overlapping of the fragment shortens the radius; this throws the styloid processes of the ulna into greater prominence and turns the hand slightly inward. How clearly the mechanical requirements for reduction and retention for such a dislocation are thus made.

CASE No. 8. NEEDLE IN FOOT.

Master B., a youth of 15, was sent to the Hospital by Dr. Ring, of Arlington, for the removal of a needle in the foot.

An attempt had already been made to remove it through incisions at two different points.

The needle entered the sole of the foot in the region of the distal end of the metatarsal bones. The skiagraph, showed its exact location beneath the distal end of the third metatarsal. The first incision exposed the needle, and it was picked out with a pair of forceps.

CASE No. 9. NEEDLE IN KNEE.

Master A., a lad of 15 years, was sent to the Hospital by Dr. F. B. Percy with a history of needle in the knee.

The accident was recent and the puncture could be seen in the skin. On palpation the needle could be indistinctly felt buried deep beneath the skin. A skiagraph, divulged its exact location. A single cut exposed it, through which it was easily removed.

CASE No. 10. SUPPOSED NEEDLE IN THE FOOT.

Miss W. presented herself at the Hospital seeking surgical relief.

A skiagraph showed that she was mistaken. No needle had entered the foot, there was an entire absence of any foreign body in the soft tissues.

The value of the x-ray is thus illustrated in a negative manner.

CASE No. 11. UNREDUCED AND UNUNITED COLLES FRACTURE.

Mrs. McQ., aged 54, came to the Hospital seeking relief from an extreme deformity of the right wrist.

It was fractured seven months previously, and said to have been "set" in an urban hospital and was carried in a sling a month. The hand has been useless ever since.

The skiagraph, showed fracture through the lower end of the radius, backward displacement of the lower fragment and total absence of union.

An incision was made along the inner border of the wrist, exposing the site of fracture. The ends of the fragments were cleared, some irregularities of bone clipped away, and the parts placed in apposition. Flexure of the hand toward the radial side maintained the parts in excellent contact.

A dorsal splint, padded in such a way as to bring pressure at the required points, fixation with plaster straps, and a roller bandage completed the dressing.

Insufficient time has as yet elapsed to pronounce upon the final result.—*American Medical Monthly*, March 1899.

BACILLINUM TUBERCULI: ITS HISTORY AND USE.

By M. A. Wesner, M. D., Johnstown, Pa.

Within the last few years a number of physicians of our school have been employing the nosodes in the treatment of disease with splendid success. There is nothing odd or strange or mysterious in their use. It is in fact only following the doctrine taught by the immortal Hahnemann in his Chronic Diseases and is in strict accord with all his teaching.

Where a great man leads we should neither be ashamed nor yet too timid or derelict of duty to follow in his footsteps, or even to go beyond the line of demarcation which he has mapped out for us in order to secure the proper advancement of our profession consistent with the principle upon which it is founded. Nor is it unworthy in man to labor so that his calling may reach the highest point attainable. Neither are we unmindful of the fact that every object around about bids us advance, and to show our devotion to the cause we must obey. Our school is capable of limitless wonders and boundless possibilities if we but thoroughly investigate the means at our disposal. But there is no room for the idler, the laggard and the slothful in our ranks. All Nature bids us advance. She tells us to move onward, but not in a retrogressive sort of way by grasping at every species of mongrelism, combinationism, proprietaryism, materialism and the other thousand-and-one isms now so largely extant; not by kneeling at the feet of the dominant school begging for a morsel of knowledge to bring into contempt the grandest system of medicine that ever existed on this earth. Oh, no. We must rigidly and perseveringly follow the method of the early Fathers and continue their work; build higher than the most sanguine among them ever anticipated: grasp firmer the doctrine of Similia; spread wider its beneficent influences, and dive deeper into the mysterious labyrinth of rational therapeutics. All of our efforts should be directed towards the present improvement and final perfection of homœopathy in a homœopathic way.

Many physicians sailing under the banner of Similia object to the employment of the nosodes because they are "filthy." While these individuals can not get their ideas above the 3x dilution it is well that they refrain from their use as in such condition we find them both nasty and dangerous. But diluted to the 200 and above they are a power in our hands and entirely divorced from the ordinary notion of anything unclean.

On page 152 of his Chronic Diseases in speaking of the antipsoric remedies Hahnemann says. "I say homœopathic use, for it does not remain *idem* (the same); even if the prepared itch substance should be given to the same patient from whom it was taken, it would not remain *idem* (the same), as it could only be useful to him in a potentized state, since crude itch substance which he has already in his body, as an idem is without effect on him. But the dynamization or potentizing changes it and modifies it; just as gold leaf after potentizing is no more crude gold leaf inert in the human body, but in every stage of dynamization it is more and more modified and changed. Thus potentized and modified also, the itch substance (psorin) when taken is no more an idem (same) with the crude original itch substance but only a similimum (those most similar)."

Now, my friends, if the product of psora when highly potentized can be so modified by the process as to become its own similimum—not the same but its like, bear in mind—it necessarily and reasonably follows in the natural order that the products of other diseases when highly potentized must also be their own similimum. By acting on this principle many chronic diseases have been removed from the human system which before were considered incurable. Their use has brought joy and gladness to many a distracted household. From the depth of darkness and gloom and despair down in the deep valley of despondency many an unfortunate individual, tortured and burdened with an irrecoverable ailment, has been raised up to enjoy the blessings and comforts and happiness of life restored to its original healthy condition through the use of nosodes.

But our subject for discussion to-day is Bacillinum Tuberculi or the virus of tubercular phthisis which you understand is a particular one of the many nosodes now in use. There can be no question of doubt that Dr. Burnett, of London, England, first made use of this remedy as we now employ it in the treatment of disease. For that discovery he can claim priority and no one dare dispute his right. Whatever honor is attached to its development and subsequent employment belongs solely and entirely to him so far as his method is concerned. According to his directions a tincture is made with alcohol of the parietes of a cavity and its surrounding tissue of a person who died of genuine pulmonary tuberculosis. Here you have everything pertaining to the tuberculous process—bacilli, debris, ptomaines and tubercles in all stages. You have in fact the virus of the natural disease itself without addition, alteration or deterioration. The tincture is potentized and carried to any degree you may desire but no physician wants to use a low attenuation.

In his kindness of disposition, however, "goody, goody" Dr. Burnett does not give the profession a formula for the preparation of his famous remedy. On the contrary he refers them to Dr. Heath of London and to Bœricke and Tafel's pharmacies in our own country. Now Bœricke & Tafel obtain all the bacillinum they sell from the London man who in turn will not dispose of the dilution--nothing in fact but the medicated pellets and the result is that physicians have to pay an exorbitant price for the remedy. Our cousins across the sea have the advantage of us in this instance and they mean to profit by the situation, notwithstanding the fact that ours is a liberal profession. It is a beautiful example of downright selfishness.

The treatment of consumption with its own sputum is an old custom. It reaches back to the sixteenth century when it was followed in both Germany and England but with what success I have been unable to learn. It was later revived and brought into prominence by our own physicians and on this account it is supposed by many to be purely an American practice. Dr. Constantine Hering, the distinguished father of American Homœopathy who died a generation ago, employed it many years since in this country, and as he was a pre-eminently successful practitioner there can be no question of doubt that cases of tuberculosis were cured through his efforts by the sputum. Dr. Samual Swan, lately of New York, another celebrated physician, also made use of it for the same purpose and I understand with splendid success. He was the first to name it tuberculinum, beside this Dr. Swan was excellent authority on the nosodes and I verily believe that more of these remedies were prepared under his directions than under those of any other physician either before during or after his time.

And there is another kind of tuberculinum prepared by direction of Dr. Kȯch of Berlin, Germany, which of course created a sensation in the medical world during the brief period it remained in public favor. Indeed Dr. Koch at one time flattered himself with the sublime conception that he had solved the problem of the treatment of consumption and that he had performed a work which would render his name immortal for all time to come. But alas for the fame of Koch and alas for his patients; they died together. Koch's virus is artificially obtained in an incubator from colonies of bacilli thriving in beef jelly. It is an artificial product and contains only a small portion of the morbid process while ours is the virus of the natural disease itself. Koch's is prepared in strong material doses in the form of serum and used hypodermically. Nearly every case thus treated did not require a second application because the quantity of poison was too great and every dose was followed by an aggravation. After all, however, the allopaths failed to learn a practical lesson from Koch's ill-fated experience.

Now let us look at the symptoms of Bacillinum. A dose of the one hundredth attenuation was taken every day for four days. The first thing noticed was an intense headache deep in the cerebral structure and extending through the whole head. There was no tenderness of the scalp, no aggravation from motion or position, no increased pain in eyes from light, but that annoying headache remained night and day and disappeared in two days after taking the last dose of the poison although it recurred several times afterwards. Another effect was flatulence of the alimentary canal with loss of appetite. That loss was a peculiar, comfortable condition. There was no desire whatever for food and no sensation as though any were needed, but after all it could be taken without nausea. I might here add that a general easy, hopeful sensation continued until the effect of the medicine wore away. Then there was expectoration of non-viscid, easily detached, thick phlegm from the air passages with a slight cough. Besides we had sticking pain in the right infra-mammary space, very restless sleep and a clear ring of the voice. I have reason to believe that if the proving were a little longer continued we would have a spasmodic cough such as is found in some cases of grippe.

We use the virus of consumption in the treatment of tubercular disease of any part of the human body—of the lungs, of the brain or its meninges, of the skin, of the joints, of the intestines etc. Dr. Burnett employs it successfully in herpes circinatus or ringworm. It is also useful in the different coughs with profuse sputum whether yellow or white arising from old bronchial affections as it controls the whole morbid process which produces the cough. In those cases of chronic bronchitis combined with asthma which compel your patients to arise at night and take their usual inhalation of the fumes of a certain combination in order to start the secretions, I have had beautiful results. In spasmodic cough following the grippe I have also used it with success and it controlled both the severity and frequency of the attack.

Now in the use of bacillinum be particular to note these facts.

1. It is to be administered by the mouth, not in the low dilutions, but in high or reasonably high potencies, and be careful to get no lower than the one hundredth centesimal.

2. The dose must not be repeated oftener than once every seven to ten days. Frequent repetition will produce an aggravation and after that you are done with the virus so far as a beneficial effect from your treatment is concerned.

3. Unless administered in the early stages of tuberculosis pulmonum it will not have a permanent effect. Your patient will show a decided improvement for a few weeks only and then the disease will go on as before until it reaches a final and fatal termination.

4. Do not allow your patients stimulants of any kind, tobacco, tea, coffee or other narcotics.

Not having the time to furnish you with many cases I will present to you just two by way of contrast.

Case 1. In August, 1893, I was called to see Mrs. P., aged 25 years. She was tall and slender; had dark hair, dark eyes and a dark complexion; was married and the mother of one child, and had been complaining of lung trouble for six months. She was emaciated, had no appetite and there was a general decline of strength. At that time she had a harrassing cough which was almost constant, worse when lying down and it kept her from sleep most of the night, and considerable thick, yellow sputum detached with some effort but the cough on account of its continuance appeared harsh and dry. She had pain and dulness of right chest between first and fourth intercostal spaces. Her temperature was 100 in the afternoon; pulse very weak and 120 per minute, and her voice had a deep hollow sound. With the exception of tea and coffee she was allowed her ordinary food and received phosphorus high infrequently repeated. At the end of two weeks I saw her again and there was no perceptible change whatever in her condition. I then gave her of bacillinum 200 three powders one every seven days and blanks in the meantime. Upon seeing her again three weeks after the last time I found a decided improvement in my patient. Her temperature and pulse were both normal; cough had nearly entirely disappeared and she slept all night; pain was gone; she had regained her appetite and there was a peculiar change in her voice. I kept her on bacilinum for three months with an occasional intercurrent of phosphorus but no other medicine and after that time she was discharged.

Case 2. Sept. 13th, 1893, I saw Mrs. S., 30 years, married and the mother of three children. She had dark hair, dark eyes and a light complexion; was medium in stature, thin and emaciated and had suffered with consumption of the lungs longer than two years. At that time she was confined to her bed with a temperature of 103 deg. in the afternoon and a pulse of 120 per minute. She had violent cough and a profuse thick, yellow sputum; pain and a large cavity in the left lung and constant diarrhœa. After a few doses of mercury to control the diarrhœa I gave her nothing but bacillinum 200 one dose every seven days with a goodly number of blanks the balance of the time. My patient began to improve and in the course of four weeks she left her bed, walked about and there was a general cessation of all the untoward symptoms. Her cough became less frequent; sputum was not so profuse; her appetite improved and she increased in weight, and her case certainly did look hopeful for the future. She could be seen daily walking about the house, on the street in front and down through the rear lot—an exercise in which she delighted. This condition of things continued to favor my patient for a period of six weeks when, notwithstanding her rapid progress, there was a return of the acute stage. She had all her former symptoms in their intensest severity. Bacillinum in its different attenuations had no effect whatever on the course of her disease, neither was there another remedy to stay its onward career and she gradually sunk until in three months from the time of relapse she calmly closed her eyes in death.

I have thus, my friends, endeavored to give you a few facts concerning a remedy which certainly deserves further investigation. Do not treat its high attenuations with indifference but give them a thorough and impartial trial. Tell your patients that consumption with its terrors, its hopelessness and its desperation can be successfully treated if taken in its earlier stages. Teach them by your skill that there is still a certain degree of hope for ultimate recovery; that there is a bright spot in the dark horizon which hangs like a pall over head; that there is a light beyond the black cloud to allay the sighs and the tears and the sufferings incident to this dread disease. People will not object to this remedy even if aware of its composition provided it brings the proper relief.—*American Medical Monthly*, Feb. 1899.

Acknowledgments.

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HAHNEMANN'S MODE OF ADMINISTERING MEDICINE.

V.

In homœopathic practice the dose always implies the dilution, attenuation, or potency of the medicine which has to be administered. The quantity administered is seldom more than a drop, often less, and very rarely, according to the fancy or conviction of the prescriber, may be a few drops, never so large as a scruple or a drachm. So that, in speaking of the dose, it is generally enough to state the dilution without mention of the quantity.

Though Hahnemann speaks of the thirtieth dilution, or, as he calls it, "the thirtieth development of power (potentized decillionth dilution X) as the one most generally used" (§270), and should be used for the sake of uniformity, he has often spoken approvingly of higher dilutions. Thus in the second note to §287 he says: "The higher we carry the attenuation accompanied by dynamization, with so much the more rapid and penetrating action does the preparation seem to affect the vital forces and to alter the health, with but slight diminution of strength even when this operation is carried very far,—in place, as is usual (and generally sufficient) to X, when it is carried up to XX, L, C, and higher; only that then the action always appears to last a shorter time." He does not say what he means by these figures. According to Dr Hughes "he meant what we should call the 60th, 150, and 300th potencies." Did he actually use these is the question. Boenninghausen has published a couple of cases treated by Hahnemann, one in 1842 and the other in 1843, from which it would appear that "in his last years he not uncommonly employed the 60th."

In the administration of homœopathic medicines, nothing, it would seem, is easier than to take a drop or a grain of a particular attenuation, and mix it with a little water or sugar of milk, and allow the patient to take it; and where the object is to administer a small fraction of a drop or of a grain it is easily attained by taking the required fraction of the vehicle, water or sugar of milk, and ask the patient to swallow it. Or where we intend to administer a very minute quantity of a drop of a higher attenuation than the 3rd centesimal, which must always be in the liquid form, we have only to use the globule of the necessary size moistened with the dilution, and administer it either dry on the tongue or dissolved in a little water. And yet, even in this simple matter of administration of medicine, Hahnemann has introduced a number of intricacies which are puzzling.

Thus in §285 after saying that "the diminution of the dose essential for homœopathic use, will also be promoted by diminishing its volume, so that, if, instead of a drop of a medicinal dilution, we take but quite a small part of such a drop for a dose," &c., he adds in a note: "For this purpose it is most convenient to employ fine sugar globules of the size of poppy seeds, one of which imbibed with the medicine and put into the dispensing vehicle constitutes a medicinal dose, which contain about the three-hundredth part of a drop, for three hundred such small globules will be adequately moistened by one drop of alcohol. The dose is vastly diminished by laying one such globule alone upon the tongue and giving nothing to drink," "because," as he says in the text, "with the smaller volume of the dose but few fibres of the living organism can be touched, whereby the power of the medicine is certainly also communicated to the whole organism, but is a weaker power." This was his opinion up to 1833, the date of publication of the 5th Edition of the *Organon*.

In the Introduction to the *Chronic Diseases* under Psora he thus lays down what he himself calls a *fundamental rule* in the treatment of these diseases: "To let the action of the remedy, selected in a mode homœopathically appropriate to the case of disease which has been carefully investigated as to its symptoms, come to an undisturbed conclusion, so long as it visibly advances the cure and while the improvement still perceptibly progresses. This method," continues he, "forbids any new prescription, any interruption by another medicine, and forbids as well the immediate repetition of the same remedy." He then says—"There are not a few cases, where the practised careful Homœopath sees a single dose of his remedy, selected so as to be perfectly homœopathic, even in a very severe chronic disease, continue uninterruptedly to diminish the ailment for several weeks, yea, months, up to recovery; a thing which could not have been expected better in any other way, and could not have been effected with several doses or with several medicines."

In the preface to Vol. iii. of the same work published in 1837 on the Technical Part of Homœopathy, he modifies his instructions on the mode of administering medicine, of course, as usual, on the authority of experience.

He repeats what he said in the 5th Edition of the Organon, that "a small pellet of one of the highest dynamizations of a medicine laid dry on the tongue, or the moderate smelling of an opened vial wherein one or more such pellets are contained, proves itself the smallest and weakest dose with the shortest period of duration in its effects," and says such a dose is suitable in slight acute ailments of patients of a very excitable nature. But says he, "the incredible variety among patients as to their irritability, their age, their spiritual and bodily development, their vital power and especially as to the nature of their disease, necessitates a great variety in their treatment, and also in the administration to them of the doses of medicines. For their diseases may be of various kinds: either a natural and simple one but lately arisen, or it may be a complicated one (combination of several miasmata), or again what is the most frequent and worst case, it may have been spoiled by a perverse medical treatment, and loaded down with medicinal diseases."

Limiting himself to the latter class of cases he says: "Experience has shown me, as it has no doubt shown to most of my followers, that it is most useful in diseases of any magnitude (not excepting even the most acute; and still more so in the sub-acute, in the tedious and most tedious) to give to the patient the powerful homœopathic pellet or pellets only in solution, and this solution in divided doses. In this way we give the medicine, dissolved in seven to twenty tablespoonfuls of water without any addition, in acute and very acute diseases every six, four, or two hours; where the danger is urgent, even every half an hour, a tablespoonful at a time; with weak persons or children, only a small part of a tablespoonful (one or two teaspoonfuls or coffee spoonfuls) may be given at a dose. In chronic diseases I have found it best to give a dose (*i.e.* a spoonful) every two days, more usually every day."

One might think such administration of the homœopathic medicine, pellets in solution in water, was so simple and unobjectionable as not to require any modification. But strangely enough Hahnemann was not satisfied with it, for according to him, "as water even when distilled begins to spoil in a few days whereby the power of the small quantity of medicine is destroyed, the addition of a little alcohol is necessary, or where this is not practicable, or where the patient cannot bear it, I add a few pieces of hard charcoal. This answers the purpose," we are assured, "except that in the latter case, the fluid in a few days receives a blackish tint from the shaking which is necessary before taking each dose." One wonders why should a watery solution of a medicine be kept so long as to cause it to spoil, so as to necessitate its being preserved by the addition of alcohol or of a few pieces of charcoal? The quantity of alcohol is not definitely stated, but it could not be a very small quantity, as it was feared that many patients might not bear it. What is most curious is that Hahnemann did not think that charcoal, which imparts a blackish color to the medicinal solution from being frequently shaken in it, would not destroy its medicinal quality. What is this frequent friction of charcoal against the sides of a glass-vessel containing a watery solution, but a form of trituration, which cannot but develop its medicinal properties? And hence, besides the medicine in the solution intended to be given to the patient would there not be Carbo Vegetabilis in addition?

In the following paragraphs he scatters to the winds what he had previously taught about the smallest possible dose and the single dose. "Before proceeding, it is important to observe," says he, "that our vital principle cannot well bear that the same unchanged dose be given even twice in succession, much less more frequently to a patient. For by this the good effect of the former dose of medicine is either neutralized in part, or new symptoms proper to the medicine, symptoms which have not before been present in the disease, appear, impeding the cure. Thus even a well selected homœopathic medicine produces ill effects and attains its purpose imperfectly or not at all." It is to this fact he attributes "the many contradictions of homœopathic physicians with respect to the repetition of doses." And we are further told that "in taking one and the same medicine repeatedly (which is *indispensable* to secure the cure of a serious chronic disease), if the dose is in every case varied and modified only a little in its degree of dynamization, then the vital force of the patient will calmly receive *the same* medicine even at brief intervals very many times in succession with the best results, everytime increasing the well-being of the patient." "And this slight change in the degree of dynamization is even effected," he solemnly tells us, "if the bottle which contains the solution of one or more pellets is merely shaken five or six times, every time before taking it!"

Then follows a strange and new teaching. "Now when the physician has in this way used up the solution of the medicine that had been prepared, if the medicine continues useful, he will take one or two pellets of the same medicine in a lower potency (*e.g.*, if before he had used the thirtieth dilution, he will now take one or two pellets of the twenty-fourth), and will make a solution in about as many spoonfuls of water, shaking up the bottle, and adding a little alcohol or a few pieces of charcoal. This may be taken in the same manner, or at longer intervals, perhaps also less of the solution at a time, but every time the solution must be shaken up five or six times. This will be continued so long as the remedy still produces improvement and until new ailments (such as have never yet occurred with other patients in this disease) appear; for in such a case a new remedy will have to be used." If a medicine in a particular dilution continues to be useful, why should the dilution be changed? Does not the very continuance of usefulness show that the particular dilution is acting beneficially upon the vital principle?

Who could imagine that Hahnemann should give such minute directions for a novel mode of preparation of the medicine for administration to patients, only to condemn it a few paragraphs later on. "Convenient as the mode of administering the medicine above described may be," says he, "and much as it surely advances the cure of chronic diseases, nevertheless, the greater quantity of alcohol or whiskey or the several lumps of charcoal which have to be added in warmer weather to preserve the watery solution were still objectionable to me with many patients." And what does he substitute for it? A scarcely less objectionable, at least quite an unnecessary, mode of preparation, which he says he has found preferable with *careful* patients. "From a mixture of about five tablespoonfuls of pure water and five tablespoonfuls of French brandy—which is kept on hand in a bottle, 200, 300, or 400 drops (according as the solution is to be weaker or stronger) are dropped into a little vial, which may be half filled with it, and in which the medicinal powder or the pellet or pellets of the medicine have been placed. This vial is stoppered and shaken until the medicine is dissolved. From this solution one, two, three, or several drops, according to the irritability and the vital force of the patient, are dropped into a cup, containing a spoonful of water, this is then well stirred and given to the patient, and where more special care is necessary only the half of it may be given."

We cannot but wonder that Hahnemann should not for a moment have thought that in directing a dose of a homœopathic medicine (whether a drop or a few drops of a particular dilution, or a pellet or a few pellets moistened with it) to be given in solution in a certain quantity of water, he was but giving so much of a higher dilution. Thus, for the sake of illustration, say a drop of the 30th dilution of Carbo Vegetabilis is put into 100 drops of water, thoroughly mixed with it, and then administered to the patient, this is tantamount to giving 100 drops of the 31st dilution of the same medicine. Or, if out of pellets of such size that 300 of them have been moistened with a drop of the same dilution, 3 are taken, dissolved and thoroughly mixed with 100 drops of water, does not this mixture become the 32nd dilution? Hence the elaborate directions for keeping the doses of a medicine in what he looked upon as an incorruptible solution are absolutely needless. Is it not better far that each dose of medicine should be prepared fresh, than that several doses should be kept prepared in fluids which are neither pure water nor pure alcohol?

Hence it will be seen that the so-called divided doses of a particular dilution, prepared as directed by Hahnemann, are but large, sometimes enormously large, doses of a higher dilution. And what relation can there be between such mode of administration and the number of succussions for previous dilution or potentization, it is not possible to make out. And yet Hahnemann asserts: "When I was still giving the medicines in *undivided* portions, each with some water at a time, I often found that the potentizing in the attenuating glasses effected by ten shakes was too strong (*i.e.*, the medicinal action too strongly developed) and I, therefore, advised only two succussions. But during the last years, since I have been giving every dose of medicine in an incorruptible solution, divided over fifteen, twenty, or thirty days and even more, no potentizing in an attenuating vial is found too strong, and I again use ten strokes with each. So I herewith take back what I wrote three years ago in the first volume of this book." How many trials or experiments with parallel cases are necessary to enable one to arrive at the above conclusion? Considering how difficult it is to get exactly parallel cases, one can easily imagine the fallacies which are likely to arise at every step of the investigation. And we may well question if Hahnemann had actual opportunities of making the necessary observations. Nothing short of numbers of concrete cases can justify any one in believing as positive fact what is here asserted as such.

Another mode of administration of medicine employed by Hahnemann, was olfaction, and this was at first reserved for very sensitive patients, but afterwards recommended for all. "If it be necessary," says he in the note to §285 of the *Organon*, "in the case of a very sensitive patient, to employ the smallest possible dose and to bring about the most rapid result, one single olfaction merely will suffice." He further says in the note to §288: "It is especially in the form of vapour, by olfaction and inhalation of the medicinal aura that is always emanating from a globule impregnated with a medicinal fluid in a high development of power, and placed, dry, in a small phial, that the homœopathic remedies act most surely and powerfully." He then tells us how the olfaction is to be done: "The homœopathic physician allows the patient to hold the open mouth of the phial first in one nostril, and in the act of inspiration draw the air out of it into himself and then, if it is wished to give a stronger dose, smell in the same manner with the other nostril, more or less strongly, according to the strength it is intended the dose should be; he then corks up the phial and replaces it in his pocket cases, to prevent misuse of it, *and unless he wish it, he has no occasion for an apothecary's assistance in his practice.*" By the way we may observe Hahnemann never misses an opportunity to have a fling at the apothecaries.

He assures us that "a globule, of which ten, twenty, or one hundred weigh one grain, impregnated with the thirtieth potentized dilution, and then dried, retains for this purpose all its power *undiminished* for at least eighteen or twenty years (my experience extends this length of time), even though the phial be opened a thousand times during that period, if it be but protected from heat and the sun's light." He anticipates the objection to olfaction when both nostrils are stopped up by coryza or polypus by directing that in such cases "the patient should inhale by the mouth, holding the orifice of the phial betwixt his lips." In the case of little children he advises the orifice of the phial to "be applied close to their nostrils when they are asleep, with the certainty of producing an effect." Even patients, whose sense of smell has been completely paralyzed, "may expect an equally perfect action and cure from the medicine by olfaction."

His confidence in the efficacy of this mode of administering medicines is more strongly expressed further on in the same note: "The medicinal aura thus inhaled comes in contact with the nerves in the walls of the spacious cavities it traverses without obstruction, and thus produces a salutary influence on the vital force, in the mildest yet most powerful manner, and this is much preferable to every other mode of administering the medicament in substance by the mouth. All that homœopathy is capable of curing (and what can it not cure beyond the domain of mere manual surgical affections?) amongst the most severe chronic diseases that have not been quite ruined by allopathy, as also amongst acute diseases, will be most safely and certainly cured by this olfaction. I can scarcely name one in a hundred out of the many patients that have sought the advice of myself and my assistant during the past year, whose chronic or acute disease we have not treated with the most happy results, solely by means of this olfaction; during the latter half of this year, moreover, I have become convinced (of what I never could previously believe) that by this olfaction the power of the medicine is exercised upon the patient in, *at least*, the same degree of strength, and that more quietly and yet just as long as when the dose of medicine is taken by the mouth, and that consequently, the intervals at which the olfaction should be repeated should not be shorter than in the ingestion of the material dose by the mouth."

This was his opinion about olfaction up to 1833, the date of publication of the fifth, the last, edition of the *Organon*. He modified this opinion considerably in 1837 when the second edition Vol. iii of the *Chronic Diseases* appeared. In the preface to this volume he said, as we have seen, that the best mode of administration of a medicine is in solution in water, and that it is only in cases "where a great irritability is combined with extreme debility," that olfaction is recommended. And in such cases "when the medicine is to be used for several days, he allows the patient to smell daily of a different vial, containing the same medicine, indeed, but every time a lower potency, once or twice with each nostril according as he wishes him to be affected more or less."

Yet another mode of administering medicine that was adopted by Hahnemann, was the rubbing of the medicine on the skin that is being given internally. So that this was used as an adjunct to the internal administration. After speaking of olfaction, and of the capacity of the mucous membranes of the nose and of the mouth to receive the influence of medicines, he says in § 292 that "even the external surface of the body, covered as it is with skin and epidermis, is not unsusceptible of the powers of medicines, especially those in a liquid form, but the most sensitive parts are the most susceptible," and explains in a note that "rubbing in appears to favor the action of the medicines only in this way, that the friction makes the skin more sensitive, and the living fibres thereby more capable of feeling, as it were, the medicinal power and of communicating to the whole organism this health affecting sensation." But he takes care to add in the 5th Edition; "Homœopathy, however, hardly ever requires for its cures the rubbing in of any medicine." Thus in 1833 he was not much in favor of this mode of administration.

But in 1837 (Preface to Vol. iii of the *Chronic Diseases*) we are told that "this mode of procedure has been frequently proved by myself and found extraordinarily curative; yea, attended by the most startling good effects. He directs that "the limb on which the solution is to be rubbed in must be *free from cutaneous ailments*," and that "one limb after the other should be used, in alternation, on different days, (best on days when the medicine is not taken internally). A small quantity should be rubbed in with the hand till the limb is dry," the bottle being shaken five or six times. He thinks this procedure "will explain the wonderful cures, of rare occurrence indeed, where chronic crippled patients with *sound skin* recovered quickly and permanently by a few baths in a mineral water, the medicinal constituents of which were to a great degree Homœopathic to their chronic disease." The explanation perhaps in many cases is correct, but then does it not clash with the dogmas of the single remedy and of the minimum dose?

We have placed before our readers the mode which Hahnemann introduced for preparing medicines from crude drugs. The object originally was to reduce the dose, but by the peculiar processes employed for this purpose, trituration and succussion, unexpected medicinal properties were developed in inert substances, and many substances medicinal in their crude state were apparently rendered more powerful in their action. The original interpretation given by Hahnemann of these unusual phenomena was the correct one, *viz.*, that they were due to the fineness of the particles of the substances, caused by those processes whereby they (the substances) were enabled to penetrate deeper into the tissues of the body. But Hahnemann, as we have seen, abandoned this physical interpretation for a metaphysical one, and this led him to absurd speculations and frequent contradictions, and even to unnecessarily complicated modes of administering medicines.

We have thought it our duty in the interests of homœopathy to pass in review the modes of preparing and of administering medicine which were invented by Hahnemann, and in doing so we have been obliged to subject his opinions and speculations to such criticism as we were led to by the light of modern science and of common sense. But while we have done so we are not forgetful of the value of those inventions however we might have differed from him as to the way of judging of that value. Without believing with him that trituration and succussion draw out the spiritual medicinal powers of drugs, as something different and apart from their material properties, we have no hesitation in declaring that they are of inestimable value in reducing crude drugs to finer and still finer particles whereby they can penetrate deeper into the tissues and ultimate constituents of the organism and thus exert pathogenetic influence in health and therapeutic influence in disease. The practice of medicine, on the homœopathic law, would have been impossible but for these processes which, while they reduce the dose, render the drugs more penetrating and far reaching.

We have no hesitation in repeating what we have often said that—"Properly speaking, this discovery of infinitesimal doses is the most original of Hahnemann's discoveries, for whatever may be said of the law of similars as to its foreshadowings existing before in the minds of some of his predecessors, the same cannot be said with any shadow of truth of these infinitesimal doses. They are so peculiar, and so peculiarly his own, being almost inconceivable as apparently opposed to the very fundamental notions of magnitude, that they are the greatest stumbling blocks to the progress of the New System." But, as we believe we have shown, he failed to grasp the true and full significance of the discovery.

REVIEW.

Leaders in Homœopathic Therapeutics. By E. B. Nash, M.D. Boericke & Tafel, Philadelphia, 1899.

This is a good book with a bad, at least, a misleading, name. No body can imagine that by Leaders in Homœopathic Therapeutics the author means leading medicines of the new system. It is another Characteristic Materia Medica. The object of the work is set forth in the Preface under six heads:

FIRST.—To fasten upon the mind of the reader the strongest points in each remedy. Good off-hand prescribing can be done in simple uncomplicated cases if we have fixed in our minds for ready use, the *characteristic* symptoms.

The elder Lippe was remarkable for such ability.

SECOND.—To try to discourage the disposition to quarrel over Symptomatology and Pathology. Neither can be ruled out, and it is foolish for our school to divide on such a bone of contention. Every Symptom has its pathological significance, but we cannot always give it in words; but the fact that it has such meaning is sufficient reason for prescribing on the *Symptom* or *Symptoms* without insisting on, or trying to give, the explanation.

THIRD.—To insist on the fact that the question of dose is still an open one, and so I have taken pains to give the dose I have found best, not insisting that any one is bound to give the same; but it is fair to say that if they use a different one and fail, they must blame themselves, not me.

FOURTH.—To condemn the abuse of drugs, both in the old school and ours.

If there is one point in the Homœopathic system of Therapeutics that recommends it before that of the old school, it is that we have discovered a law by which we are able to apply remedies for the curing of the sick without entailing upon them drug effects, often more serious than the original disease.

No honest man of either school ought to object to such an improvement in the science of therapeutics.

FIFTH.—I have hoped to so write as to induce any old school physician, who would overcome prejudice so far as to read any or all of this book, to experiment along the lines I have indicated, believing that any such physician, of sound head and honest heart, will be irresistibly led to give Homœopathy a large, and perhaps finally, the largest space in his confidence and practice.

FINALLY to express, after nearly forty years of conscientious experimentation, my firm and confirmed belief in the Similimum, the single remedy, and the minimum dose.

We have quoted the above passages entire because, it will be seen, the author has given in them his views on the doctrinal points of the new school.

As regards his first position, we may observe, as we have often done, that if good off-hand prescribing with the characteristic symptoms were not possible, his book as well as other similar books would have been absolutely useless. He has rightly observed at the end of his article on Nux Vomica: "In actual practice there are two kinds of cases that come to every physician. One is the case that may be prescribed for with great certainty of success on the symptoms that are styled *characteristic* and *peculiar*. The other is where there are no such symptoms appearing; there is only one way; *viz.*, to hunt for the remedy that, in its pathogenesis, contains what is called the *tout ensemble* of the case. The majority of the cases, however, do have, standing out like beacon lights, some characteristic or key-note symptoms which guide to the study of the remedy that has the whole case in its pathogenesis."

We are in entire accord with him as regards his second position. We believe that had it not been for the symptoms which are but the vital expressions of pathological condition, pathology alone, as revealed in the dead house, would never have led to the successful practice of Homœopathy. But pathology, on that account, is not to be discarded. When available, it is a most valuable adjunct to symptomatology. We say, when available, for it is notorious that we have not, and probably cannot have, the pathology of every drug nor even of every disease. And if we had to depend upon pathology for the treatment of disease, more than three-fourths of our diseases we would have been obliged to leave untreated.

As regards his third position though we believe with the author that the question of dose is still an open one, and perhaps will remain so for a long time to come, we cannot follow him in his use of what we cannot help calling the uncertain and the transcendental infinitesimals, the thousandths and the millionths. If it be true, as Dr. Dudgeon appears to have proved, that Jenichen's high potencies were not made after the genuine Hahnemannian fashion, but that simply the number of shakes or succussions determined the number of his potencies, then it is certain that Jenichen's potencies were not high potencies at all in the Hahnemannian sense. And if it be true that the modern high potencies are made by what is called the method of fluxions then we may well shake our head and bid good bye to the millionths and the billionths as positive and absolute delusions.

As regards his fourth position we can confidently assert that while there is no question about the abuse of drugs in the old school, there is such a thing as not only abuse, but even gross abuse of drugs in our own school. This results from the administration of wrong medicines, from the unnecessary repetition of the right medicine, and from the frequent change of medicines. Under the mistaken idea that homœopathic infinitesimals do no harm, pracititioners very often prescribe quite at random, and repeat medicines even when properly selected, and change them from sheer impatience, that is, without waiting for the full development of their actions. We have seen simple diarrhœa converted into cholera by the wrong administration of arsenic, veratrum, and other powerful cholera remedies; we have seen cases of cholera rendered worse by the frequent repetition of the indicated remedy; we have seen simple bronchial catarrh developed into pneumonia by the abuse of phosphorus, antimonium tartaricum, &c., where simpler remedies would have brought on a speedy cure.

Hence then there is necessity for discouraging the abuse of drugs in our school, and this can only be done by the thorough study of the Materia Medica, with special reference to their characteristics. And hence any book which facilitates such study must be welcome to the busy practitioner. In our last number we took notice of three such books!— Dr. Burt's, Dr. Guernsey's, and Dr. H. C. Allen's. We have to accord our welcome in the present number to Dr. Nash's.

In Dr. Nash's book we have separate treatment of nearly 200 drugs, and incidental treatment by the way of parallels and comparisons of nearly 40. The author says in the introduction that he has not adopted the usual way of beginning with Aconite and ending with Zincum, but followed the bent of his own inclinations, or the movings of his spirit. The attentive reader cannot fail to notice a quasi-sort of grouping. The drugs do not follow each other in disorder. The allied ones are as a general rule placed one after another. Thus we have Nux Vomica, Pulsatilla, Bryonia, Antimonium crudum; the salts of Mercury; China, Carbo vegetabilis, Lycopodium, &c. The keynotes or characteristics are in many cases much fuller than in the works previously noticed, and the comparisons and parallels drawn with an artistic hand, the style being lively, pleasant and impressive, interspersed with gems of experience from the author's long practice of nearly forty years. We do not know if the author has written other works. He does not say so in the title page, and his name does not appear in Bradford's Bibliography. If this is his first work, and if he goes on as he has begun, he will enrich the practical literature of our school.

Homœopathic Treatment for the Malarious Fevers of West Africa. By J. W. Hayward, M.D., Liverpool, 1898.

This is the reprint of an address delivered by Dr. Hayward to the African Trade Section of the Incorporated Chamber of Commerce of Liverpool on the 16th November, 1896. Dr. Hayward acknowledges that he has had no personal experience of these fevers, but he justifies the suggestions he has made about their treatment by the facts that "Malaria and malarial fevers are of the same nature and require much the same treatment wherever they occur, whether in Africa, India, or America," and that "Homœopathy is a science, and can prognosticate, and provide beforehand." He cites the remarkable case of this prevision and provision when the father of Homœopathy, in 1831, before having seen a single case of Asiatic Cholera, "pointed out the medicines that would be found to be the curative ones should cholera ever visit Europe; and these are the very medicines that have been found to produce such signal success in every epidemic that has since occurred! To prognosticate is one of the powers and advantages of a true science, as well as one of the evidences that it is a science and not merely an art."

Dr. Hayward admits that the poison of Malaria is composed of living germs which are generated or rather nourished and multiplied by the decomposing vegetable and animal matters in marshes and swamps and in the filth of river banks, that these germs, contaminating the air, water and food, enter the body and give rise to fever which expresses the struggle between the body and the germs. "If the germs prevail they devitalize, disorganise, and break up the structure of the blood. This knowledge," he goes on, "and the discovery of germicide drugs, that is, drugs that will kill germs in the chemist's test tubes, gave rise to the hope that these germicide drugs would also kill germs within the living body, and thus prove to be the best means of cure for malarial fevers and other germ diseases." But this hope was doomed to disappointment; for it was soon found that "there is no drug that will kill the germs without killing the patient!"

Quinine, the favorite specific of the old school, has often miserably failed in the treatment of malarious fevers. But recently it has been found to be a germicide, and hence it is now exhibited in enormous doses in malarious fevers with the intention of killing its germs, with the result that, as every observant practitioner knows, "it frequently does more harm than good; in some cases greatly helping to bring about a fatal termination; and in cases that do not terminate fatally, damaging the stomach, the liver and the spleen, the hearing, the sight and the blood, and greatly prolonging the convalescence." What Dr. Koch has said about the action of this drug on the fevers of Africa is now known throughout the world. Indeed, he has gone so far as to assert, that it brings on black water fever where none existed before, converting a simple fever into this malignant form. "Quinine," as Dr. Hayward rightly observes, "is productive of little or no benefit in the continued, or even in the remittent form; its only place is in the intermittent form; in this it is useful; but doses of one or two grains every two or three hours will do all that quinine can do: larger doses tend to do harm."

Dr. Hayward gives in a nut-shell what the treatment of these dreadful fevers of the West Coast of Africa is likely to be: "I have no hesitation whatever in saying that in some of the very malignant attacks, if not evidently hopeless from the beginning, camphor or eucalyptus would soon check the shivering and headache; bryonia or baptisia would soon calm the raging fever and thirst; belladonna or hyosciamus would soon soothe the raving delirium and sleeplessness; ipecacuanha or phosphorus would soon arrest the dreaded vomiting: crotalus or phosphorus would soon restore the arrested urine and change it to its normal color; and crotalus or arsenicum would soon bring back the faltering pulse and turn the ebbing tide of life. These may appear very bold assertions," he says, "they are, however, no stronger than experience justifies."

EDITOR'S NOTES.

Infantile Myxœdema.

A case of infantile myxœdema reported by M. Rousoff is quoted in the *Journal de Clinique et de Thérapeutique Infantiles* of March 30th. The subject of the disease was a little girl, aged two and a half years. She exhibited the classical symptom of myxœdema and was treated for 127 days with 1-100 centigramme of thyroid extract twice a day. Her temperature, which had been below 95°F., rose to 97·9; her mental state, which had before suggested idiocy, became bright and lively, and her physical signs improved in an even more marked degree. The child died some months later from broncho-pneumonia after measles and the thyroid gland was found on postmortem examination to be atrophied. The very early age of the patient, the associated suggestion of a possibly congenital origin of her disease, the distinct benefit obtained by treatment, and the final proof of thyroid atrophy combine to render this case peculiarly interesting.—*Lancet*, April 22, 1899.

Injuries from the Rontgen rays: legal actions for compensation.

Till the present time the possibility of injury from the diagnostic use of the X-rays has been noted merely as an unfortunate accident, and care has been taken to avoid the danger as far as possible. But a new aspect of the case now appears. We notice in the daily journals the account of a lady who seeks substantial compensation in a court of law from the physician who had employed the X-rays in the diagnosis of her condition; and still another case has come under our notice of a lady threatening legal action against a medical man because she developed a slowly healing ulcer after single application of the rays for a therapeutic purpose. How a judge will regard such an application is not yet on record. But the possibility of legal trouble arising, especially in the case of neurotic women, must be remembered and guarded against by medical men who require to use the X-rays. Probably, caution should be especially exercised by those who are now using the rays extensively as a means of treatment. References have been made to the accidents produced by the X-rays by Messrs. Balzer, Monsseaux, and Darier (*Ann. de Derm et de Syph.*, vol. x., pp. 41 and 129, Jan. and Feb., 1899).—*Practitioner*, May 1899.

The Massage Scandals.

The sentence of 12 months hard labour passed at the London sessions on the man Thomas William Hill Wilson for keeping massage-houses as brothels in Jermyn-street and Portland-street although termed by Mr. McConnell, Q C., the chairman, an "unusal" one, does not in our estimation appear very severe. The fellow, who has an ill record, was making a large income out of the earnings of presti tutes and was also masquerading as a physician, publishing himself abroad as "Dr. Wilson" and obtaining patronage for his brothels by giving details in his advertisements of the genuine medical attentions to be obtained in them. The fact that respectable persons may have been deceived by his representations and either lured to sin or blackmailed in return for their credulity forms another reason for an opinion that Wilson's sentence of a year's hard labour does not err on the side of rigour. These things are known to have happened—their possibility, by the way, was pointed out in the medical press some years ago when the word "massage" was not a cover for all forms of incontinence and bestiality—and as long as such establishments as those of Wilson exist they will happen again. But the eyes of the authorities are now open as well as those of the public, so that we may fairly hope that massage houses will cease to constitute a blot on London civilisation and a danger to the innocent of the community.—*Lancet*, May 13, 1899.

Cardiac Arrhythmia observed by the Roentgen Rays.

AUG. HOFFMANN (*Deut. med. Woch.*, April 13th, 1899) says that the movements of the heart as observed with the aid of the Roentgen rays have received little attention. They can mostly be readily seen, especially in the lower third of the left border of the heart. The observation of irregular cardiac action is specially interesting, as it is possible to see how the different cardiac contractions take place. The author says that he has had on several occasions the opportunity of seeing the arrhythmia in the well-marked Roentgen picture. The most frequent forms of cardiac irregularity are the pulsus bigeminus and the pulsus alternans. It may be difficult to recognise the kind of arrhythmia present if the alternate and unequal beats do not reach the radial artery. Sometimes the cardiac impulse cannot be seen or felt, and even auscultation may not reveal the very diminished alternate contractions. The author relates an illustrative case in a man aged 26. Here the apex beat could not be seen or felt. The pulse was 78. Fourteen days later the pulse was 40. Even with the phonendoscope, the beat, which could not be felt at the wrist, was only represented by a very feeble sound. By means of the Roentgen rays, this very weak contraction was readily recognised, as the movements of the left lower border of the heart could be easily seen. A sphygmographic tracing of the pulse gave no indication of the dropped beat. Thus the case might have been looked upon as one of bradycardia. A few days later the pulse was 80 again.—*Brit. Med. Journ.*, May 6, 1899.

Perspiration in Dogs.

Some time ago we received from a correspondent an inquiry as to whether the very prevalent belief that a dog perspires through the tongue was a vulgar error or well founded. Being unable to discover any authoritative statement with regard to the sweat glands of the dog's skin, we applied to S. G. Shattock, Pathological curator at the Royal College of Surgeons, who has been kind enough to take considerable pains to give an answer. He writes as follows: The inquirer defines very precisely what he himself implies by the question by asking whether the dog exudes fluid from the tongue of the same kind as that exuded from the human skin. To this question the answer is, No. The skin of the dog is abundantly furnished with glands, having the characteristic disposition and structure of those which in man produce sweat, namely, coiled tubular structures lined with columnar epithelium and provided with long straight ducts of much less diameter than the coils. The dog's tongue, except about its posterior part, is unprovided with glands of any kind, and those found in the situation mentioned do not exhibit the microscopic characters of sweat glands, but may be classed as "mucous." These glands are furnished with wide ducts and are of the acino-tubular variety; the secreting cells are highly vacuolated, transparent, and so swollen as to practically fill the gland recess, the nuclei being displaced towards the outer or basal ends. Whatever secretion takes place, then, from the dog's tongue cannot be regarded as having the same physiological characters as that exuded from the skin; in other words, the dog does not sweat by the tongue.—*Brit. Med. Journ.*, April 15, 1899.

Hair Balls in Stomach.

SCHLESINGER AND O'HARA (*Wien. med. Woch.*, No. 7, 1899) report of a case of "tricho bezoar," or hair ball in the stomach, successfully removed by gastrotomy. The patient was 22, and had a painful tumour in the left flank. Three attacks of violent pain set in without any vomiting; the swelling was then found to be larger, and the operation was performed. The stomach was opened, and a mass weighing 2 lbs. was removed. It consisted of closely felted hair. Only after the operation was it found out that the girl was accustomed to bite the end of her hair when a child. Hair balls are common amongst cattle and mad dogs, both given to licking of their fur. Schulten found in literary records 7 cases which underwent operation, and 9 where there was no operation; thus "tricho-bezoar" is rare in man. Most of the patients were women: one believed that swallowing hair was good for the voice; another that it cleaned the tongue; another habitually moistened cow hair, with which she worked, with her mouth. The mass may lie for many years in the stomach without causing any bad symptoms. It has been known to weigh over 5 lbs. Sometimes the hair on the periphery of the mass is darker than it originally was then on the patient's head; but whether through gastric uice or physic is uncertain. Sometimes part or all of the mass passes in the intestine, and is discharged at stool. Diagnosis is possible when a movable tumour is detected in the region of the stomach and a history of hair biting is obtained. Whilst sometimes the hair does no harm, as a rule it sets up great gastric irritation, and about half the cases under observation died of perforative peritonitis. Hence operation should follow diagnosis. Schreiber describes a case where a mass found in the stomach was made up of vegetable fibres ("phyto-bezoar").—*Brit. Med. Journ.*, May 13, 1899.

Anæsthetic Leprosy: Changes in the Nerves and Spinal Chord: Necropsy.

Only a few histological investigations of anæsthetic leprosy have been recorded in literature and examination of the spinal cord and ganglia has been still rarer. In a case described by Samgin this disease began with chronic rhinitis and was soon followed by pain and then by anæsthesia in the arms and legs. The body also became almost entirely anæsthetic. The form of the anæsthesia in the affected areas was as follows. There were complete analgesia and thermo-anæsthesia, but tactile sensibility was retained though in diminished degree. The disease pursued the usual course with smooth desquamative skin changes and with atrophic patches which in the anæsthetic area became confluent and finally underwent destruction and cicatrisation. The facial nerve was paralysed on both sides in its upper part, but there were no bulbar symptoms. Claw-hand was present on both sides. The peroneal nerves were paralysed. The ulnar nerves felt thickened and hardened. The symptoms pointed on the whole to anæsthetic leprosy and excluded syringomyelia. The necropsy revealed a variety of instructive conditions. In the affected patches of skin lepra bacilli were present and they were also found in the peripheral nerves, but not in the spinal cord, posterior root ganglia, or brain cortex. The nerves examined (ulnar and peroneal) showed interstitial neuritis, with an almost entire disappearance of the myelin. In the spinal cord there was found secondary degeneration of the posterior roots and of the columns of Goll (sensory tract). Degenerated nerve fibres were also found within the ganglia of the posterior roots and these were apparently continuous with those occurring in the peripheral nerves. The cells of the grey matter of the cord in the anterior cornua were not degenerated. Samgin believes that the degenerative process began in the peripheral ends of the sensory nerves of the skin and passed upwards into the spinal cord *viâ* the posterior roots, constituting thus a degeneration of the entire sensory neuron. The changes seem to be analogous to those occurring in the peripheral neuritis of alcoholism and they suggest the action of a toxic agent elaborated by the bacilli during their growth in the cutaneous and subcutaneous tissues and in the nerve-trunks.—*Lancet*, May 6, 1899.

Reinfection in Syphilis.

Not long ago the majority of authorities denied the possibility of a second attack of syphilis. Ricord, in 1858, admitted that, theoretically, the syphilitic infection might become progressively attenuated and die out, and therefore that a patient might contract syphilis twice, in the same way as variola. Ricord, however, denied that this theory was supported by clinical evidence. Diday, on the other hand, in 1862, published a series of 32 cases of so-called repeated syphilis, and stated that a patient might contract syphilis several times, whether he had undergone complete disinfection and became infected afresh, or whether a virus of great intensity was added to the sum of infection in a patient incompletely infected by an attenuated virus. The divergence of opinion on this subject was increased by the fact that it was enough for a patient to develop an ulcer resembling a chancre in order to diagnose reinfection. Fournier, however, in 1868 stated that any syphilitic patient at any period of the disease might develop without reinfection ulcers resembling a primary sore, and pointed out that ulcers of the balano-preputial furrow are liable to inflammatory induration which is often difficult to distinguish from syphilitic induration Therefore, in order to diagnose true reinfection Fournier considered three conditions necessary: (1) An undoubted first attack of syphilis; (2) a period of quiescence, complete, or interrupted only by tertiary symptoms, and having lasted several years; (3) a new infection characterised by a fresh indurated chancre followed by undoubted secondaries. Fournier, however, stated that he had never seen such a case. Cases of what must be regarded as undoubted second infection in syphilis have, however, been recorded by Hutchinson, Zeissl, Ogilvie, and others, and more recently by Du Castel and Tarnowski. Du Castel's case was that of a man who, in 1892, was treated at the St. Louis Hospital for an indurated chancre, followed by a pustular secondary syphilide and mucous plaques in the throat. In 1897 he again presented himself at the same hospital with a second indurated chancre, which was followed by a typical roseola. Tarnowski's case was that of a man who was treated from 1886 to 1890 for various cutaneous syphilides and other manifestations of syphilis. In 1897 he contracted soft sores, which were followed in due course by a typical polymorphous syphilide consisting of macular, papular, and pustular eruptions. One of Fournier's conditions, namely, that an indurated chancre must be present, if this case can be accepted, would be proved to be unnecessary. This will be the more readily believed by those who entertain the opinion that first attacks of syphilis are frequently followed by soft sores.—*Brit. Med. Journ.*, April 15, 1899.

Fatal Tuberculosis in a Calf.

In the Proceedings of the Pathological Society of Philadelphia, New Series, Vol. II., No. 6, is an interesting paper by Dr. M. P. Ravenel entitled "A Case of Fatal Tuberculosis in a Calf." The writer very rightly points out that cases of congenital tuberculosis are rare enough to have more than a passing interest, and though this method of transmission occurs so seldom that it may practically be excluded from our calculations in considering the spread of the disease each undoubted case is instructive and worthy of record. The case which came under the notice of Dr. Ravenel is as follows. During the latter part of 1898 a cow well advanced in tuberculosis was sent to the Veterinary Department of the University of Pensylvania. On Dec. 23rd, 1898, without any assignable reason, she aborted, the fœtus being about seven months old. A careful examination was made and, so far as gross changes were concerned, nothing abnormal was found except in the liver, on which were seen two whitish nodules of about one-sixteenth of an inch in diameter. These suggested a tuberculous origin, though much doubt was felt as to their nature. They were removed and crushed in a sterile mortar and emulsified. With the emulsion three guinea-pigs were inoculated, two by the intraperitoneal method and one subcutaneously. One of these guinea-pigs died on Feb. 6th, 1899, the second on Feb. 16th, and the third, inoculated subcutaneously, was killed by chloroform on Feb. 22nd, 1899. The first two showed general tuberculosis of the abdominal organs with involvement of the inguinal and lumbar glands. The lungs were not affected. The third guinea-pig had an abscess at the point of inoculation of about the size of a filbert, filled with caseous material. There was a general tuberculous adenitis, with caseous changes in many of the glands. The lungs, liver, spleen, and omentum showed marked signs of tubercle, and a portion of the peritoneum, about one and a half inches long by three-quarters of an inch wide, was studded with tuberculous nodules. In all the animals the tubercle bacillus was demonstrated in the lesions. The placenta of the fœtal calf was unfortunately not preserved for examination. A post-mortem examination was ultimately held on the mother and the uterus was shown to be free from tuberculous lesions. The disease was confined to the lungs and the lymph glands of the mesentery. The case was therefore a good example of fœtal tuberculosis Very few instances of this nature have been published. Among the lower animals, if we except the experimental work, Dr. Ravenel has only been able to find examples amongst calves. In only 17 fœtuses have tuberculous lesions been found and in only 12 of these has the tubercle bacillus been demonstrated. To these should be added one stillborn calf and 17 calves under five days old in which the tubercle bacillus was found.—*Lancet,* May 13, 1899.

Laughter as a Therapeutic Agent.

Therapeutic effects of different kinds have been attributed to laughter by the gravest medical writers from Hippocrates downwards. The Father of Medicine laid special stress on the importance of merriment at meals. The old physicians recommended laughter as a powerful means of "desopilating" the spleen. Fonssagrives said that mirth is the most powerful lever of health. Tissot professes to have cured scrofulous children by tickling and making them laugh. Dumont de Monteux relates the strange case of a gentleman who got rid of an intermittent fever after witnessing a performance of *Le Mariage de Figaro,* at which he had laughed consumedly. Other learned doctors state that nephritic colic, scurvy, pleurisy, and other affections are favorably influenced by laughter. We have heard of a case in which an abscess in the pharynx burst during a fit of laughter. The popular view of the good effect of laughter on nutrition is enshrined in the proverb, "Laugh and grow fat." The most recent contribution to our knowledge of the therapeutics of laughter comes from an Italian physician. Dr. D'Aiutolo in a communication presented to the Medico-Chirurgical Society of Bologna on February 17th discussed the action of laughter as an expectorant. He used this treatment in five cases of bronchitis and other affections in which there was "a morbid product in the bronchial tubes and alveoli." A good laugh by shaking the chest helps the expulsion of the secretion and "produces a state of physical and moral well-being." Dr. D'Aiutolo admits that there may sometimes be a difficulty in applying the treatment. Susceptibility varies according to age, temperament, education, and social position. The practitioner has to bear all these different conditions in mind in selecting the kind of joke suited to the case with which he has to deal. As to sex, women are generally said to be deficient in a sense of humour, but they do not themselves think so—that, as Ancient Pistol says, "is the humour of it." In a recent number of the *Cornhill Magazine* the point was discussed by two ladies in a manner which places the feminine side of the question in a painfully clear light. Then there is the matter of race. The Latin races like a larger dose of the *gros esprit Gaulois* in their jokes than our less primitive or less frankly human taste can tolerate. On the other hand, hyperboreans otherwise blameless are often the subjects of an idiosyncrasy which renders them virtually "immune" against the most merrie-conceited jests. There is a further difficulty, and that is the choice of a person to administer the remedy, Sometimes, as Dr. D'Aiutolo somewhat reluctantly admits, a layman will succeed in moving the patient to laughter better than the most scientific physician. If the treatment becomes popular it may lead to the development of a new speciality, for which we venture to propose the name of "gelototherapy." A properly trained gelototherapeutist would see at a glance the indications of a particular case, and would never, for instance, administer a full flavoured "Limerick" to an Archbishop or a jibe at female frailty to a New Woman. He would also be careful in adjusting the dose and would frequently have, like Oliver Wendell Holmes, to avoid "being as funny as he could." The laughter treatment, we are told by Dr. D'Aiutolo, is contraindicated in cases of pleurisy, heart disease, and peritonitis, and also in the case of neurotic children and pregnant women. We would add that it would be well to use it with caution in the case of elderly gentlemen afflicted with gout and strong-minded ladies with a mission.—*Brit. Med. Jour.*, April 22, 1899.

The Piano as a Cause of Neuroses.

All—except perhaps teachers of music—will agree that at the present day the piano is too much with us. It is one of the drawbacks of an advanced civilisation, and if we are often tempted to pity those who lived in the dark ages before the dawn of the electric light and when the automobile was not, our satisfaction at the superior graciousness of our state may be tempered by the recollection that they were free from the everlasting tinkle of the piano. The maelströms of crashing sounds, which many performers think it necessary to produce as proof of their skill jar the delicate apparatus of the nervous system to a degree, that, in irritable persons, might have serious conseqences if they were compelled to undergo the torture frequently. It was doubtless after an experience of the kind that Théophile Gautier defined music as the most costly of noises. Sir James Paget once took the trouble to calculate the number of muscular movements executed by a skilled player in a single performance. But who shall count the thrills, the pangs, the multitudinous shocks which a sensitive person suffers from the pyrotechnic display of a pianist who sets himself to tickle the ears of the groundlings? A lady boasted to Dr. Johnson that a piece which her daughter had just played was difficult. "Madam," replied the sage, "I wish it had been impossible." Oliver Wendell Holmes must have suffered the torture of the piano when he wrote so feelingly of science which

Like a poultice comes
To heal the blows of sound.

Only less irritating to the nerves are the ineffective strumming of the amateur and the damnable iterations of the learner. The piano has been the *causa teterrima* of quarrels that have sundered ancient friendships; it has wrecked many enterprises of great pith and moment; it has disturbed the finer adjustments of the cerebral machinery in many literary and scientific workers, has driven studious men from their books to the bottle, and has stimulated peaceable citizens to the commission of violent assaults. These are among the evil effects of the piano considered *passive* as the schoolmen would say—from the point of view of the sufferer. But the operator does not come off scatheless. A recent writer, Dr. Waetzhold, thinks that the chloroses and neuroses from which so many young girls suffer may be largely attributed to the abuse of the piano. He therefore urges that the "deadly" custom of compelling young girls to hammer on the keyboard before they are 15 or 16 years of age should be proscribed by public opinion. Even at that age the exercise should be permitted only to those who, in addition to real talent possess a robust constitution. He cites figures showing that, out of 1,000 young girls studying the piano before the age of 12 years, 600 were afflicted with nervous troubles in later life; while among those who began to learn the piano at a later age, only 200 suffered in like manner. Of those who never touched the instrument at all, only 100 were similarly afflicted. The study of the violin produced even more disastrous results than those attributed to the piano. Fortunately the violin is not yet a universal nuisance as the piano has come to be. If the barbarous fashion of compelling all girls to learn the latter instrument cannot be put down in any other way, Parliament might be less usefully employed than in passing an Act for the protection of minors from this form of cruelty. The man who deliberately adds one to the number of indifferent players who already vex the general ear should be held guilty of malice against the human race.—*Brit. Med. Journ.*, April 22, 1899.

CLINICAL RECORD.

Foreign.

CASES CURED BY BRYONIA.

By Dr. W. W. Gleason.

Case I. *Mastitis.*—Mrs. T., 32 years of age, called me in the second week (tenth day) of her first confinement. Her temperature was 103 and pulse 120. The trouble was Mastitis. Evidently she had been carelessly handled and had caught cold.

She was restless, sad and discouraged.

The right breast was swollen, turgid hot and painful. The left breast was fast getting into the same condition. There was no milk in the right and but little in the left. She had had a good flow of milk before the inflammation set in in the breasts.

The child had been put upon the bottle. There were stitching dartings through the right breast, aggravated by deep inspiration.

The lochia was offensive.

The urine was scanty and high colored.

There was a troublesome cough which caused pain in the sore breasts.

Bryonia alba 30th was given, two doses, which cleared up the whole case and in 4 days Mrs. T. was free from fever, and again nursing her child with a good flow of excellent milk.

Case II. *Effects of Anger.*—Miss H., tall, slender, very nervous, excitable, moody and irritable. In August, 1898, this young lady was engaged in conversation with some of her companions in the yard of her father's house, when she was accosted by a neighbor in a manner that caused her to fly into a fit of anger. In a few minutes after the burst of anger she became unconscious, was carried into the house, laid upon a bed, and efforts made to revive her but without avail. I was hurriedly summoned and found her in the following condition.

She was tossing about upon the bed.

Her countenance bore an anxious expression, was alternately pale and red.

The eyes were swollen and from between the lids acrid tears were oozing.

At times with the tossing there was quite profuse perspiration.

The heart was very rapid and laboring.

The respiration sobbing and sighing, and medicine was swallowed with difficulty.

There are many remedies to be thought of in ailments caused by anger, one of which must be chosen in this case, and but one. Some might argue that if let alone the young lady would come out of her trouble in a few hours, and such might be true; but I was acquainted with her and knew that she had an irritable heart which would be left more irritable from the effects of this burst of anger if a remedy curative of its effects was not given. I had seen her in a previous spell of this kind.

We have two peculiar symptoms in this case namely, "Face alternating pale and red" and "restlessness with perspiration." There are two remedies peculiarly suitable in ailments from anger with face red and pale. Those remedies are *Bryonia* and *Staphysagria.* Of these two, *Bryonia* alone as far as I know has perspiration with tossing restlessness. *Staphysagria* is not put down as having the swelling of the eyes. Now, collecting the other symptoms we find them well covered by *Bryonia. Bryonia* 30 was given, and it controlled the whole matter in a few hours.—*Hahnemannian Advocate*, April 15, 1899.

CASES CURED BY CHAMOMILLA.

By Dr. F. H. Lutze.

Case I. *Cough.*—E. H.; aged 3 years, coughs almost incessantly day and night. The cough seems fatiguing, dry and hoarse, almost like croup, with rattling of mucus in the trachea. But this, the mother says, is not so at night, when the cough is dry, almost constant and continues during sleep, without waking the child, but hinders every one near from sleeping, the cough is so hard and loud.

The left cheek is red and hot, the right one pale and cold. During the day he cries and frets considerably, but is quieter when carried about. Chamomilla 30th, one dose dry on the tongue, gave no relief but apparently aggravated the cough. Chamomilla 30th in water for the next two days did not seem to change the condition. On the fourth day he received Chamomilla 200, one dose dry on the tongue, and this restored the child to perfect health.

Case II. Mrs. C., called me in March, 1897, after some week's sickness. Her case was as follows:

Very restless, nervous, anxious, impatient, angry at every trifle, worse from thinking of her troubles, and better from walking about. Vertigo when rising up after lying down.

Her face was drawn anxiously, and yellowish.

Her eyes were troubled with flickerings before the vision when lying down.

There were noises in her ears like rumblings of distant cars.

There was crawling in the nose with dry coryza, followed by profuse excoriating coryza.

One cheek was paler than its fellow and the lower lip was cracked and bleeding.

The tongue was coated white, breath offensive, taste foul, and thirst for lemonade and large draughts of water. She dallied in drinking water as if it was very refreshing to her.

The stomach was distressed and there was abdominal tendency to flatulent colic.

The stools were rather frequent, thin, green, and griping and left a burning smarting at the anus.

There was yellow burning leucorrhea between the menses which were painful with menstrual colic after every burst of anger.

The menstrual blood was dark red and clotted.

During the menses there was drawing pain in the calf of left leg.

Chamomilla 30th cured promptly.

CASE III. *Suffocative Spells.*—Abel C., 17 years of age, rather stout, full fleshed, robust. This man would wake nights about midnight with hoarse cough, or have the cough soon after waking, followed by suffocative spells of very severe character, relieved only by bending the head backward. The cough was caused by a feeling as of something coming up in his throat shutting his breath off.

His face was red and burning hot, with considerable sweating of the face during and after eating, and sweating of the head in sleep.

There was a puffy condition of the abdomen, which became full and tense during the suffocative spells, with sharp pains in the abdomen and urging to stool which was watery, green, and offensive, accompanied with burning in the neck of the bladder.

There are four remedies which are prominent in conditions where there is sweating of the face during and after eating, namely, *Chamomilla*, *Ignatia*, *Natrum muriaticum*, and *Sulphuric acid.* Suspecting that the whole trouble was caused by gas in the bowels, *Chamomilla* was given because of its virtue in such conditions and the fact that in its proving *puffiness of the bowels*, *watery green stools*, *suffocative dyspnœa*, and *sweaty face*, *during and after eating* were prominent. It cleared up the whole trouble. Was given in the 30th potency.

CASES IV. *Infantile Diarrhœa.*—E. A., about 3 years old. Seen at 5-30 p. m.

Had a restless night with much fever at times, while between, the skin was cool.

Toward morning complained of headache.

Has been drowsy all day, with jerking during sleep.

Cough, short and dry, even without waking.

Expectoration not raised.

Face flushed.

Thirst.

Hot, dry skin.

Temperature 104°; pulse full and regular.

I then gave *Aconite*, but without effect, and the next day these additional symptoms were obtained.

Sweats on the head during sleep.

Attacks of screaming, wakes from sleep screaming.

Is very cross and ugly.

Must be held all the time as it is the only way to quiet her.

Diarrhœa began to-day, stools watery, yellow, very offensive, smell of rotten eggs, with colic.

Temperature 105°.

Chamomilla cured rapidly.—*Hahnemannian Advocate*, April 15, 1899.

CASES CURED OR BENEFITED BY PODOPHYLLUM.

By George Black, M.B., (Edin.).

Case 1. *Ovarian Congestive Neuralgia.* On 20th of September, 1895, a young woman, æt. 26, of fresh complexion, medium height and stoutness, with fair hair and grey eyes, came to me complaining of pain in the side, the situation of which she indicated, on my asking her to do so, by placing her hand over the left ovarian region; also of pain in the back—lumbar region. She has had a slight degree of pain in the left side for years, but latterly it has become worse.

"When I breathe it seems to draw up and then it pains me. I don't feel it at my periods, nor for a little after—a few days, sometimes a week. It is a kind of stabbing pain; it is always there a little, but when I draw my breath it stabs worse." Sometimes she fancies there is a little swelling, but it goes again and she cannot say that it makes any difference to the pain. There is no pain during urination and no increased desire to evacuate the bladder. She suffers from constipation, going two and three days without a stool. She has pain in the rectum at times, generally when the pain in the side is worse. She began to menstruate when seventeen and has been "regular," with the exception of one occasion, viz., the month before last, which she missed. At this time she was home in Cornwall. On returning to Torquay it came on again.

Podoph. 1, in the form of trituration pellets, four in a tumbler of water: a dessert-spoonful three times a day.

Wed., Oct. 17th. "I feel much better; I have not had the pain for more than a week; the bowels are also better. I have had an action every other day regularly. I have not had the pain in the back since beginning to take the medicine."

This patient continued well for, I think, a period of between two and three years, when she had a slight return of the ovarian pain, which was again removed by podophyllum.

In the *Cyclopædia of Drug Pathogenesy* the case is recorded of a girl, æt. 20, who took two grains of podophyllin. On the sixth day she experienced "pain in right ovary and uterus." Under "Podophyllum" Buck, in his *Outlines of Materia Medica*, mentions "numb aching pain in region of left ovary." Its beneficial effect on this patient's constipation cannot be regarded as a homœopathic action of the drug, but the dose which removed the ovarian pain may have exerted a slightly physiological influence upon the bowel.

Case 2. *Ovarian Congestive Neuralgia with Prolapse and Retro-*

version of Uterus.—Mrs. W., æt. 35, tallish, with light-brown hair and grey eyes, of medium stoutness, consulted me on Oct. 15th, 1895, and said that the day following a miscarriage, which she had ten weeks ago, she began to suffer from pain in the left ovarian region, gnawing in character and at times shooting. When she stooped down and attempted to rise up again it was very sharp; it would come in the left ovarian region and shoot right down to the genitals. On making a digital examination I found the uterus prolapsed and retroverted, the fundus lying in the pouch of Douglas, and the os looking forward to the symphysis pubis.

Podoph. 1, trituration pellets, six in a tumbler of water: a dessert-spoonful three times a day.

Mon., Oct. 26th. "After taking the medicine two days I began to feel improvement, and by the end of a week the pain was entirely gone." To-day I find the uterus in much better position, the os is looking slightly backwards and the body cannot now be felt in Douglas's pouch.

When I first saw her there was a great amount of abdominal distension, and she feared, whether anything might have been left behind from her miscarriage or something be forming. On percussion I found the swelling tympanitic and resonant, and was able to reassure her on these points.

Nov. 23rd. The pain in left ovarian region is gone and the swelling is much less than it was, but the ovary remains tender on pressure, and there is also well-marked tenderness in the right ovarian region. She complains also of a great deal of pain in the hypogastric region: "It aches," she says, "so that I don't know what to do, and then again it will shoot." Sometimes she feels the downbearing in the passage so much that she is obliged to go and sit down: at other times she does not feel it at all. She is better when she gets up mornings and worse at night. "It sticks and pricks at times in the passages." There is still some prolapse, but the retroversion is much less.

In the fourth edition of his *Manual of Pharmacodynamics*, p. 764, Dr. Hughes says: "A good deal of evidence has accumulated of late showing a power on the part of podophyllum of benefiting prolapse of the uterus as well as of the rectum." The above case goes some little way in confirming this.—*Monthly Homœopathic Review*, May 1899.

Gleanings from Contemporary Literature.

AN ADDRESS ON MENTAL ABILITIES AND DISABILITIES OF CHILDREN.

Delivered before the Childhood Society at the Parkes Museum on January 31st, 1899.

By Francis Warner, M.D., F.R.C.P. Lond.,
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Ladies and Gentlemen,—There is a valuable literature of school hygiene and we have many useful books dealing with the prevention of illness and the cultivation of health during the period of school life and in the schoolroom. School hygiene in this aspect has been pursued by many workers as far as possible on the basis of the exact sciences, employing methods of inquiry, observation, and description as in other branches of physical science; facts seen are recorded, analysed, and summarised, while methods of experimental research have corrected and added exactness to the knowledge first obtained. School hygiene has led to valuable results in the prevention of disease and the early detection of illness by tracing the connexion between school life and the prevention of epidemics. Such means have done much to promote the *corpus sanum;* it is desirable that we should follow the same methods of natural science in studying the health and mental abilities and disabilities of children. A large field for inquiry and study is here presented as supplemental and co-relative to the psychological aspect of mental training and school life. Among many other sections of this subject we might study mental aptitude and mental disabilities or causes of mental dulness in children; mental weariness and brain fatigue; mental confusion and abnormal concomitant conditions; defects of memory and means of removing them; reversion in mental states and childish faults; and mental breakdown at adolescence and its connexion with previous training. A large number of other questions and many propositions bearing on the mental status of children might be mentioned. All these subjects may be investigated on the same lines as those used in studying school hygiene in its concern with bodily health—that is, by direct observation of children and record of the facts seen.

Mental aptitude or the potentialities for mental training are indicated in a child in whom we observe spontaneity of action easily controlled through the senses and regulated by impressions received; spontaneity of movement, liveliness in facial expression, talkativeness, with capacity to follow organised games and occupations are hopeful signs. When these are accompanied by good imitative power in action and in speech, with retention of what has been acquired and more exact repetition after practice, the indications of educable brain power are distinctly present.

The cultivation of each individual sign of such aptitude, first separately, then collectively, may be advisable; this is specially the case when one item is deficient, as, for example, where some form of spontaneity is not easily coördinated—it may be restless eye-movements or finger twitches which lead to incorrect observation and poor manipulative ability. These points I have described in detail elsewhere.

The subject of mental fatigue has been investigated by many accurate observers on experimental lines: at one period a great deal was said on "over-pressure," sometimes, I venture to think, without sufficient analysis of the many causes which may produce exhaustion. Weariness may be due to many circumstances; much might be said as to the effects of muscular exercise, ventilation, diet, conditions of the blood and of the circulation, &c., in producing fatigue; but I wish here to keep as closely as possible to the consideration of brain condition leading to fatigue and exhaustion. The signs of brain fatigue are easily observable in the movement and balance of the parts of the body, especially as seen in the face, the eyes, and in finger action. In brain fatigue the force expended in movements is small in amount and the total number of movements may be lessened, while action in the child is less easily and regularly controlled through the senses. At the time, a certain number of irregular movements, spontaneous or not stimulated by directions, may occur, suggesting that the fatigued child is reduced to a more childish condition of spontaneity than when his brain is fresh and healthy; thus, the eyes may often move in the horizontal direction uncontrolled by sight or sound, or the fingers as he holds his pen, or when the hands are held out, or as he fidgets without doing his work. Loss of force or nerve-tone is indicated by the lessening of facial expression, fulness or bagginess under the eyes, to which may be added spontaneous knitting of the eyebrows or corrugation. The hands when held out free in front are usually at an unequal level and droop in the fingers, while the head may drop to one side and the shoulders be unequally balanced. In such a child all movement in response is slow and inaccurate as well as the speech and the signs of mental action.

The chief means of preventing exhaustion lie in the early recognition of the signs of fatigue, which may appear first either in mental response or in motor signs. It is quite possible for a trained pupil showing considerable signs of brain fatigue to continue good mental work, as during an examination, but there is peril in prolonged periods of brain fatigue without recreation. I will not say that fatigue is always to be avoided, but the day's fatigue should be recruited by the night's rest.

It must be remembered that "mental fatigue" is used in physiology as a term intended to express the amount of brain (cortex) energy spent in mental processes. It is the amount of physiological work done among the brain-cells (psychosis) that we intend to express, not the number of movements or amount of movements employed in its expression by words or action. Still less is the physiological energy spent among the nerve-cells to be estimated by the value we as educated persons put upon the usefulness of the outcome. It may be doubted whether we can determine the quantity of mental action occurring in a given time or whether any unit for quantitative comparison exists, this cannot be represented by the value of the work done. It is only the mental action which is expressed that we can estimate quantitatively—not the quantity of brain action; many thoughts may arise and be inhibited in the brain not expressed; in some difficult processes of thinking this occurs to a large degree, especially in original work and in thinking out cause and effect or in seeking illustrative examples. The time and order of succession and adhesion of mental acts has more to do with the character of mental processes than the quantity of brain-energy expended. Thoughts of real value, like actions, depend on their coördination by circumstances, not upon the degree of brainwear expended. Estimation of the value of intellectual acts in the child and adult differs so greatly as to make comparison difficult. They may, however, be more easily contrasted. In the child the impressions retained are less exact; spontaneity is more abundant and may interfere with any established order of thoughts. Such spontaneous thoughts as brain-work may add to mental fatigue. There exists but few established modes of thought to come into play leading to any conclusion. Effective training lessens brain fatigue.

From the point of view of mental hygiene attention and mental confusion may be contrasted, together with the means of cultivating the former and avoiding the latter. In making observations for the purpose of determining the modes of brain action corresponding to a mental act of attention we must directly observe the motor expression in the child. Spontaneous movement is equally characteristic of young animals and young children. A dog going out for a walk with his master evinces his joy in spontaneity by running in the field and making ever wider circles or ellipses; he may return to his master and then recommence his career till seeing a cow he barks at her but is again recalled by his master's voice. At length he runs at the cow and teases her. Spontaneous action is here the primary mode of energy displayed; it becomes controlled and coördinated partly by the master's voice, in part by the sight of the cow; these controlling forces act in different proportion. This strongly resembles the movements of the root of a seedling bean in its circumnutation, wandering in ellipses, while under control or guidance of impressions received at or near its apex, obstructions to its downward growth are avoided.

Spontaneous brain action is the basis of mental power. In the infant at birth, as in the adult during quiescent states, the respiratory movements occur in a uniform series; while the child is awake spontaneous movements are seen in the limbs, especially in the small parts, the fingers and toes, but they occur in no apparent order and are not uniform in character; further they are not controlled by the senses. Spreading area of brain action is seen in movements when the child cries. When three months old some control of these movements may be seen as the child is impressed by sight or sound ; this is the earliest manifestation of potentiality for mental action ; still there is no delayed expression of impressions received and no act of choice is observed. At birth no signs of mental attention are seen, the infant shows many spontaneous movements corresponding to spontaneous action in many brain-centres, but these are not controlled through the senses. Later in the evolution of the infant this spontaneity may be momentarily arrested by impressions received through the organs of sense ; show the infant a coloured object and coördinated action follows ; spontaneity of movement is quelled for a few seconds, then the object is grasped by a prehensile action. During the period of quiescence there is said to be an act of attention followed by adapted action. The brain processes during the quiescence (period of inhibition and diatactic action) then appear to be a pre-adjustment of the brain-centres which is expressed by the adapted act of prehension. The physiologist cannot admit that the will thus arranges the brain ; this act of attention results from the sight of the object. The brain conditions necessary to an act of attention are (1) healthiness in the general characters of the brain ; (2) spontaneity ; and (3) control of the brain by an impression through the senses, as shown by inhibition and the coördinated action following. Attention as a physiological process is inferred to be action among the brain-centres and may occur with or without subsequent expression. The school child must be tolerably quiet before he will think connectedly ; a pause for thought is required in thinking over the answer to a question ; there may be an expression indicating understanding without any verbal response. Sometimes attention is best arrested by sight only ; other pupils may be more easily impressed by hearing the spoken word.

In cultivating the faculty of attention we need spontaneity in the brain which is the foundation of mental power ; we must produce some impression on the brain and for the sake of exactness and simplicity in training a slight impression through one sense organ only is at first advisable ; this is especially the case with difficult children. The impression must be distinctly produced before a full act of attention can follow ; the object must be looked at for some seconds before it is completely seen, as the figure in a proposition of Euclid, hence irregular eye-movements may interfere with attention. An excess of spontaneous brain action and any spreading area of activity such as corresponds to a number of disconnected thoughts may be indicated by a number of extra-movements or fidgetting and vague, disjointed response in place of the signs of attention. This is often observable with the signs of fatigue in restless movements of the eyes, the fingers, and the feet.

The modes of brain action may not be sufficiently well balanced or proportioned at the stage of evolution of the child to allow of uniform or prolonged attention. A pupil may at times show marked mental confusion and make an absurd reply to a question. This may arise from several causes. 1. When a spreading area of spontaneous action in the brain is indicated by fidgetting while the child turns his head and his fingers twitch, he may ejaculate words irrelevant to the question, yet thoughts may be arising, though not under direction. Such spreading and spontaneous brain action shows the need of further training; it may also accompany other signs of fatigue. 2. Eye-movements need training in order that the impressions received by the brain may be exact. When a child is working an addition sum, as the eyes move to successive figures in a column an extra or lateral eye movement may bring into view the wrong figure and lead to confusion. 3. In reading eye-movements may similarly bring the wrong line into view. 4. In writing the pupil may copy the line above in place of continuing his exercise. 5. Confusion may arise from the question being only partially heard, as from deafness; if the child be also short-sighted his difficulties are greatly increased in receiving teaching by demonstration. 6. Rapid action of the heart with a quick pulse is common in nervous children and may be accompanied by other conditions of importance to health. Such disturbance of the circulation may produce marked mental confusion. 7. Sometimes an answer is irrelevant to the question put, yet it contains the reply to a former question, as to which a train of thought has continued. Such delayed expression of thought is not a mindless condition, but shows an untrained mode of mental action. Brain training may do much to prevent mental confusion and increase the power of attention.

Memory depends upon reactivity of the impressions previously made upon the brain; these impressions returning in activity as a series in the same order as that in which they were produced originally. Thus the child when directed to do so, repeats the numerals in their order of succession as previously taught. This—as a matter of physiological action—depends upon the (cohesion) exactness of the impressions retained and upon adhesion of those impressions, so that energy flows along the pre-arranged nerve-paths from the brain-centre stimulated by your direction to repeat the lesson to those centres which were impressed in succession by previous teaching. Such forms of memory remind us of the exact reproduction of a speech by the phonograph, where the dints made on the wax are retained and reproduce in their former order the vibrations causing sound, without variation or adaptability; no interaction occurs among the impression on the wax. Overtaxing the faculty of memory producing many fixed impressions, to a certain extent tends to lessen mental adaptability fixing a certain number of impressions for thought and limiting free mental power. A large number of automatic actions lessens the number of movements; idiots often have repeatative movements and but little freedom of action.—*Lancet*, April 29, 1899.

CARBOLIC ACID AS A TEST FOR ALBUMIN.

By Walter Colquhoun, M. A., M. B., C. M. Glasg.

Early in the course of my practice I was led to investigate the delicacy of our common tests for albumin and to search for another test which would have the delicacy of the nitric acid test without its fallacies. A patient had come to me suffering, I believed, from chronic interstitial nephritis. I could not find albumin in his urine by the heat test except on two or three occasions when there was scantiness instead of excessive excretion of urine. The nitric acid test showed a trace of albumin apparently, but my confidence in that test was lost on discovering crystals after withdrawing some of the urine from the region of the cloud and examining under the microscope, and this occurred when the specific gravity of the urine was only 1012. The picric acid test was also unsatisfactory and I was led accordingly to seek a new test and to determine, *en passant*, another point on which I had no information—namely, what is the exact loss per diem of albumin when a trace is discovered in the urine. After a considerable amount of experimenting I chose a saturated solution of carbolic acid in absolute alcohol as a test equalling in delicacy the nitric acid test and giving perfect satisfaction after a short experience in working it.

One part of carbolic acid is soluble in about 20 parts of water at 60°F. or perhaps in about 13 parts if the solution has been made by the aid of heat; it is very soluble in alcohol (six in one approximately), in ether, or in glycerine. The test solution having been made by dissolving carbolic acid to saturation in absolute alcohol I float a few drops of the solution on the top of the fluid to be tested by means of a pipette. Owing to the greater solubility of carbolic acid in alcohol than in water the layer of testing fluid on the surface becomes opaque and rather milky-looking owing to the separation of carbolic acid as water is imbibed in the transfer between the urine and the alcohol. As the alcoholic solution of carbolic acid imbibes more water and becomes heavier drops also of a milky appearance on their surfaces may detach themselves and fall to the bottom of the test-tube. If such albumin be present the whole of the fluid to be tested may become milky and the alcoholic layer may settle quickly to the bottom of the test-tube with large milk-white flakes of albumin attached to it. In the case, however, of the presence of only a small quantity of albumin the test tube must be allowed to lie for some time just as in the nitric acid test, and the presence of albumin will be denoted by a milkiness extending to a certain depth below the alcoholic layer. As has already been remarked, milky-looking drops of the alcoholic solution of carbolic acid may separate and fall to the bottom of the test-tube. This happens even when the alcoholic test solution is floated on top of pure water and, as has been explained, the milkiness is due to the imbibition of water and consequent separation of carbolic acid. That this milkiness is not necessarily due to albumin may be shown when only a trace of that substance is present by passing the bottom of the test-tube two or three times through the flame of a spirit lamp, when, carbolic acid being more soluble in warm water than in cold, the milky deposit at once clears up. The milkiness at the upper part of the test-tube below the alcoholic layer is, however, due to coagulated albumin and does not appear unless that substance is present nor is it dissipated by heat.

I tried solution of carbolic acid in water, in ether, and in glycerine as tests for albumin, but none approached in delicacy the solution in absolute alcohol. The ethereal solution is floated on top of the solution of albumin. It shows also a milky layer below the ethereal solution, but the milkiness is slow in appearing and is not so pronounced as with the alcoholic test solution. I explain the greater delicacy of the latter test by the fact that the upper layer of the albuminous fluid to a certain depth comes to contain a mixture of alcohol and water and thus can hold more carbolic acid in solution than water alone can do. The solution of carbolic acid in glycerine is passed to the bottom of the test-tube. It also gives a cloud but only after a long period, owing to the slowness of diffusion, and it also does not give such pronounced results as the alcoholic solution.

To determine the delicacy of the test I made up a solution of white of egg and proceeded to determine the amount of albumin per cubic centimetre (c.c.) by placing three cubic centimetres of the solution in a weighing bottle, evaporating to dryness at 180°F., placing the stopper in the bottle, cooling, momentarily removing the stopper, replacing it, and then weighing. Out of two estimations the first gave 0·0119 gramme of albumin per cubic centimetre of solution and the second gave 0·0121 gramme. Considering that the fluid was measured by a pipette the results are remarkably close and we may take the average 0·0120 gramme, as representing the weight of albumin in each cubic centimetre of the solution which may be called solution A. One cubic contimetre of solution A was now added to 200 cubic centimetres of water and the mixture taken for testing with the various tests. I should mention here that the nitric acid test is commonly too carelessly done. I use a slender one cubic centimetre pipette to take up the nitric acid. The outside of the pipette is then wiped and the nitric acid is passed to the bottom of the test-tube containing the albuminous fluid. After delivery the upper end of the pipette is again closed by the finger to prevent admixture of the fluids during withdrawal and the pipette is withdrawn. The results of the first series of tests were as follows :—Heat test : Could not affirm presence of albumin by this test. Picric acid test : Clear by transmitted light ; slight impairment of clearness by reflected light with the tube held against a dark background. Nitric acid test : Ring developed after an interval. Carbolic acid test : Milkiness in upper part of the tube ; slight deposit of albumin finally.

The next series of tests were done with a mixture containing one cubic centimetre of solution A to 400 cubic centimetres of water with the result that the picric acid fell out of the competition. Continuing the tests I have found that after allowing the tubes to lie for a considerable interval both nitric acid and carbolic acid showed the presence of albumin in a mixture containing one cubic centimetre of solution A to 1000 cubic cenmetres of water. Since one cubic centimetre of solution A contained 0·0120 gramme of albumin, dried at 180°F., each cubic centimetre of the last mixture contained only 0·000012 gramme of albumin. This result brings out in a striking manner the great delicacy both of the nitric acid test and of the test by solution of carbolic acid in absolute alcohol. The result works out at 0·0053 grain per ounce. Hence when a mere trace of albumin is found in the urine the amount of albumin (dried at 180°F.) lost per diem on a 50 ounce excretion of urine is only 0·265 grain, or rather less than one third of a grain. The figures emphasise the fact that the anæmia accompanying cases of chronic interstitial nephritis is not at all dependent on loss of albumin, but rather on the ill-health following circulatory, alimentary, and nervous disorders. One cubic centimetre of solution A to 40 cubic centimetres of water gives a mixture which shows a pronounced milkiness on the application of the heat test, followed by considerable deposit of albumin. Yet even in such a case the patient would lose only 6½ grains of albumin (dried at 180°F.) per diem on an excretion of 50 ounces of urine.

As regards the fallacies of the test I have as yet found none which were not attributable to careless manipulation. Mucin may be precipitated by alcohol but I have had no trouble owing to its precipitation yet. I clear the urine, preferably by filtering, and it may be remarked in this connexion that the best Swedish filtering paper, such as is used for quantitative work, clears urine which a cheaper paper would allow to pass through cloudy. Another point worthy of mention is that cooling for a few moments, as, for example, by playing an ether spray on the upper part of the outside of the containing vessel, will often bring down a cloud of urates before filtering and is besides instructive as regards the degree of saturation of the fluid. In both the nitric acid and the carbolic acid tests the urine should be diluted to about specific gravity 1010. The proved delicacy of these tests allows plenty of margin for dilution and if after dilution no albumin be found its presence is in my opinion negligible. Indeed I have found albumin present in small quantities in the urine of such a large proportion of my patients that I am coming to regard its presence merely as a warning to me to make a careful examination and a guarded diagnosis. If the urine were always diluted before applying the nitric test the fallacies of that test would probably disappear. In the case of the carbolic acid test it is important that the fluid tested should not have too high a specific gravity since in that case the interchange between the alcoholic layer and the fluid tested is too slow. The dilution may be continued to a specific gravity below 1010 without affecting the result much if such a course be wished. In conclusion, I may state that since my investigations I can speak with certainty as to the presence or absence of albumin, whereas before I had undertaken them I would not like to have certified in certain cases.—*Lancet*, May 6, 1899.

THE PHYSIOLOGICAL ASPECTS OF GRIEF.

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It is the duty of the members of the Bureau of Mental and Nervous Diseases to make, from time to time, contributions in psychology to this society. At the present time, we shall endeavour to offer, briefly, a few of the psychological aspects of grief.

Grief is psychalgia or soul pain. It is the antithesis of joy or happiness. Grief is one of the universal afflictions of mankind. Its existence dates back to the expulsion of our first parents from Eden. Its effects have found lodgement, to a greater or less extent, in the hearts of all humanity down to the present time; and yet, as the world moves on, the forces of grief will be expelled from the souls of men, and the forces of delightsome joy will march in to take their places.

Recognizing grief as an important factor in all human experiences, it seems to me that we should consider, now and then, the causes and the conditions of this depressing and degenerating emotion. The object of such a study should be the discovery of remedies which will tend to relieve this sad state of the oppressed human soul.

We find the causes of grief in every adverse condition in life. We see the pain of sorrow upon the faces of children who have been the victims of neglect, of abuse, of poverty, of rags, and of insufficient and unwholesome food. In its subtler forms we find causes of grief in a lack of opportunity to get an education, in a disappointment in the gratification of of æsthetic tastes, in the benumbing of the ambitious impulses of youth. In mature life, we see expressions of grief upon the countenances of those who have met with and been over-borne by the forces of oppression, and tyranny, and wrong. We see grief tracing its lines of premature old age upon the faces of those who have experienced a loss of friends, a sweeping away of property, a defeat in political aspirations, a disappointment within the sacred realms of love.

Again, grief finds expressions in those who have suffered from depletions of the body, through malnutrition or malassimilation; or in those who have experienced the shocks of either physical or mental disease. The impairment of bodily functions throughout the digestive tract produces semi-starvation and anæmia of the brain. This robs the human being of power to fulfil his mission in life. Without strength there can be no achievement, and when the body is bent or broken by disease, the spirit feels the effects of prostrating and benumbing grief.

Physical disease is often a cause of grief; on the other hand, the shock of misfortune, as felt by the mind, often tends to produce physical degeneration. Grief is the shuttlecock of disaster that runs back and forth through all the warp and woof of life. It leaves a trial of sombre tint which is as clear and unmistakable as the red thread that runs through all the cordage of the British navy.

Again, grief finds its way to the human soul through the commission of crime, and the remorse which sometimes follows the performance of unlawful actions. Grief may also enter the human heart through brooding over the unchangeable experiences of the past, or the disturbing environments of the present; and, worst of all, grief finds itself yoked with those anxieties which, through unfortunate and unwise teachings, trouble the souls of men as to their future prospects. It has been said that "the fear of the Lord is the beginning of wisdom," but fears of future punishment, which are sometimes conjured up in the minds of children by torturing teachers, too oft, alas! develop a grief in youthful hearts which is as disheartening as the prophecies of Poe's raven.

We have presented a few of the general causes of grief. They represent physical, mental, and spiritual misfortunes. All men are subject to disappointments, and losses, and anxieties concerning past and future events. The common disasters and unfortunate beliefs of life are productive of that lurid-tinted emotion known as grief.

The ordinary expressions of grief are those of tears and lamentations. When grief is carried to its ultimate, we have a condition known as despair. A grief that will lead to utter despondency and desolation of soul in one person, will be borne with philosophical fortitude by another. There are some instances of noble and exalting grief in the world. Job was afflicted with boils on his body, and the shock of losses in his soul. The Healer of Galilee was "a man of sorrows, and acquainted with grief." Abraham Lincoln was the victim of a settled and long-lasting grief, brought on through disappointment in love while he was yet in the vestibule of manhood. Job in the midst of his grief developed a masterly patience. The grief of Him who sorrowed over the afflictions and distresses of humanity was a grief borne with such noble fortitude that it became a heavenly inspiration. Lincoln sought to antidote his griefs, and likewise to relieve the griefs of others, by injecting into the words and actions of his daily life the tincture of perennial mirth. These examples of patience, and fortitude, and fun are worthy of imitation by all those who are called upon to endure the ordinary and extraordinary afflictions of life.

We speak now of grief, and the wisdom and advisability of getting away from it as fast as possible, because if grief is allowed to settle and stay in the human heart, then insanities, with delusions and despairs, are sure to rise up, and flourish in all their exuberant hideousness in the garden of the human soul. Men are crazed with grief from many causes. Chief among the griefs which produce insanity are those which come from sudden shock of pain or loss, and the wounding of pride, or mental suffering through false accusation.

Having considered the causes of grief, and the conditions which exist when grief permeates the soul. we should look for those remedies which are most likely to effect a satisfactory cure or relief.

In the first place, all teachers should disseminate a knowledge of the value of optimism. Every human being should be taught the necessity for looking upon the bright side of things as a psychological benefit. Each one should be taught to develop the art of caution, and avoid as far as possible, needless disasters. Having minimized misfortune by caution and care, then we should cultivate a spirit of fortitude, and learn to endure with patience such afflictions of life as may chance to come our way. A knowledge of the truth, and its willing acceptance ; a study of caution, and the avoidance of misfortune by reasonable means ; and uncomplaining endurance of that which is inevitable and unavoidable, are the true psychological principles upon which we should base our action and feeling in life.

And again, we should crown our worldly wisdom and our optimistic views with the bright and glorious halo of a much-enduring faith. "Faith is the substance of things hoped for, the evidence of things not seen." The faith of the new psychology is the faith of the eleventh commandment. The old rules of life were restrictive. The new rule of life is a rule which, if implicitly followed, will lead us away from present trials and cares and tribulations, and from future brimstone ! The old rule was : "Thou shalt not ;" the new rule declares : "Thou shalt." One restrains from sin ; the other impels to love for God and one's neighbor. Under the old law there was fear ; under the new law there is love. The psychological tendency of the times, while still hindered by much that is old and effete, is steadily marching toward the light and glory of the millennial morning.

It may be the minister's function to relieve the effects of sin upon the human soul by offering the rich sympathy of religious consolation. It is the duty of the physician to relieve grief by curing the ailments and distresses of the body and mind. The great Healer of Gennesareth offered to the victims of grief and overwear the blessed boon of rest. "Come unto Me, all ye who labor and are heavy laden, and I will give you rest" was the treatment which He offered to those who were emaciated in body, and anxious in mind. Coupled with rest, we should offer such food as will most surely nourish and recuperate the exhaustions of the worn-out body, and with renewed strength of the body comes renewed hope and aspiration to the human soul.

Above all, we may offer to those who need most efficacious help the blessed potencies of homœopathy. If Dr. Gallvardin of Lyons, France, can cure with homœopathic remedies, those evil propensities and unwise passions which fill the hearts of men at times with bitterness, and provoke them to gluttony and crime, why may we not cure the griefs of humanity by the administration of :

"Many simples operative, whose power
Will close the eye of anguish ?"

We have been able to test some homœopathic remedies in this direction, and we find that when properly applied these medicines, whose use was disclosed by the immortal Hahnemann, are as effective in relieving mental distress as in curing physical disease.

We present the characteristic indications of six remedies for the cure of amelioration of human griefs. They are as follows :

Arsenicum.—Arsenicum is a remedy which is useful in cases of grief after business reverses or mental over-exertion. The arsenicum patient fears that some great calamity is about to overtake himself or his family. He is restless and anxious ; despairs of life, and often becomes suicidal, trying to kill himself, or to mutilate his body. The grief of the arsenicum cases is evident to all, as his mental perturbation and restless anguish do not allow him a moment of tranquil quiet. The arsenicum patient is driven from place to place in search of relief, and on account of the restlessness and anguish he quickly emaciates and becomes a living skeleton.

Ignatia.—The ignatia patient is full of suppressed grief due, perhaps, to some imaginary crime, to some slight reprimand, or to disappointments in love ; the loss of dear friends or beloved objects. This grief is nourished in solitude, feeding upon itself, and any effort to draw out the patient finds her taciturn and moody. Women are more subject to ignatia moods than men. The ignatia patient does not want to talk, but wants to be alone, and desires to brood in some quiet corner ; she is averse to amusement in any form.

Natrum Muriaticum.—The natrum muriaticum patient is sad and gloomy, and depressed without apparent cause. Such a case seems to revel in its grief, and tries to recall all the disagreeable occurrences of the past for the purpose of indulging in melancholy meditation. Consolation aggravates the condition, either recalling to the mind past sorrows, or arousing concern for the future. Despair deprives the natrum muriaticum patient of all mental power. He is taciturn, easily offended, avoids society, and thinks he is pitied by every one because of his misfortunes. Above all, the natrum muriaticum patient weeps profusely and vigorously.

Pulsatilla.—The grief of pulsatilla is a changeable grief. The patient (usually a woman) is apt to have alternate moods of crying and laughing. The pulsatilla patient, in her mental state, resembles an April day, when sunshine alternates with rain at frequent intervals. The pulsatilla patient is at times melancholy, and inclined to shed tears ; and again, she becomes cheerful, and indulges in outbursts of laughter. The depression of pulsatilla is generally greater in the morning, and the mind recurs at such a time to business or domestic affairs. The pulsatilla patient is gentle and affectionate in her disposition ; is mild, and yields easily to persuasion. Consolation is acceptable to such a patient, and, in fact, the pulsatilla case enjoys lively company and good advice.

Stramonium.—The stramonium patient is filled with sadness, and apprehends evil consequences from trifling things. He walks about, shedding tears, and uttering loud lamentations. He is unconsolable, and has pangs of conscience because he thinks he is not honest. From a condition of noisy excitement, where he is inclined to become pugilistic, he passes into another state where he is overborne with cowardly fears which arise from frightful imaginings. He sees strange animals on every hand that seem about to tear him to pieces. Hence in the midst of profound grief for shortcomings, he is beset with abject and horrible fears or personal injury. He tries to escape from the horrible gorgons by which he is surrounded, and cries out piteously for help.

Veratrum Album.—The veratrum album patient has depression of spirits, grief, anxiety, and apprehensiveness as if she had commited some great crime. The veratrum album patient talks a great deal upon religious subjects, despairs of salvation, also thinks that her position in society is jeopardized on account of some evil action in the past. The veratrum album patient has sometimes a suicidal tendency from religious despair. She thinks that she has violated her vows to God, and that, consequently, her soul will be eternally damned. The veratrum album patient is usually an over-conscientious person given to much meditation upon religious subjects, and is addicted to long prayers. The shock of anxiety or fear, as felt by the veratrum album patient, tends to the production of physical collapse, and from a state of religious frenzy, anxiety, and restlessness, this patient soon comes to resemble, physicially, a case of cholera in the stage of collapse.

In conclusion, permit me to state that the consideration of grief is peculiarly appropriate at this time because the nations of the earth are suffering from the after-effects of the "grip"; and chief among the sequelæ of that dread disease we find not only a physical prostration, but a mental depression of the kind which typifies every form and phase and fashion of grief. As physicans, we should consider all the tendencies of the times so far as the production of certain forms of either mental or physical disease may be concerned, and then each physican should exercise in his own heart and teach it to others the benign philosophy of optimism. He should encourage those who are tired out and stricken with grief to rest until recuperated. He should give to all who are enfeebled the most effective kinds of meat and drink. He should apply homœopathic remedies selected according to the *simillimum* in each case after careful individualization; and, for a final injunction to every patient, he may say with Goethe:

"If thou wouldst live unruffled by care,
Let not the past torment thee e'er;
As little as possible be thou annoy'd;
And let the present be ever enjoy'd;
Ne'er let thy breast with hate be supplied,
And to God the future confide."

—*North American Journal of Homœopathy,* April 1899.

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THE ROLE OF PATHOGENIC MICROBES IN ETIOLOGY.

BY DR. P. JOUSSET.

(From *L'Art Medical* for June 1899)

WHEN, in pathology, an error has deeply penetrated the leading spirits of the profession, repetitions become necessary. We, therefore, deem it useful to set forth from a new point of view what we have already several times said on the true rôle of pathogenic microbes in the production of disease. For the generality of physicians, in the present day, general etiology is summed up in two words—*infection* and *intoxication*. Every disease comes from without, from a pathogenic microbe which penetrates the organism through breaks of continuity. This is *infection*. This microbe secretes a toxine, and if this toxine happens to triumph over the vital resistance, the disease is established. This is *intoxication*. And, if clinical facts unfortunately come to contradict this theory, the disciples of the new etiology are ready with specious explanations and the current of opinion remains unchanged. As we are persuaded that truth excels error and will ultimately triumph, and as we believe in the good faith and intelligence of our colleagues, we proceed to publish anew a demonstration which we have already several times given by giving it a new form and more calculated to bring about conviction.

And first, we recognise the rôle of the pathogenic microbe, and we do not wish in the least to undervalue the great importance of the work of bacteriology. And we further add that it is precisely on the results of the work of the laboratory that we wish to build our etiological doctrine.

We divide our subject into two parts. Is the microbe the *cause* of the disease, or is it only a circumstance necessary to its development and an instrument of its transmission?

I. *Is the microbe the cause of the disease?*

And first, what is a cause? Without entering here into definitions of a transcendental philosophy, we content ourselves with the common acceptation of the term. "The cause is that by the action of which a thing is." Consequently the cause of a disease will be that by whose action the disease exists. Let us apply this notion of the cause to the rôle of the microbe in the production of diseases.

It is incontestible that a disease (and here the question is only of infectious diseases) cannot exist without a pathogenic microbe. Can we conclude from this that the pathogenic microbe is the cause of the disease? No, because, if the disease cannot exist without the microbe the microbe can exist and often does exist whether the disease exists or not. Hence it does not come within the definition of the cause. But more, there exist two orders of facts in contradistinction with this first principle, that there is no disease without a pathogenic microbe.

What are these two orders of facts? They are first, that several different microbes can produce the same disease, and secondly, that perfectly definite pathogenic microbes inhabit our economy without ever producing the diseases which correspond to them and which live also in a saprophytic state.

It is advantageous to develope these two points of the question and establish upon clinical facts and well founded bacteriological researches propositions in which we have them summarised.

1. *The same disease may be produced by different microbes.* We take up successively, for example, pneumonia, meningitis, gastro-enteritis of infants, and cholera.

(*a*) *Pneumonia.*—If pneumonia is almost always produced by the encapsuled pneumococcus, numerous facts demonstrate that this same disease may be produced equally by the streptococcus, by the bacillus coli, and even by the bacillus of Loeffler, as I have reported an incontestible observation of it. I add that the symptoms, the lesions, the progress, the termination of lobar pneumonia do not differ with the microbes which are the instruments of its production.

(*b*) *Meningitis.*—Setting aside tubercular meningitis due to the bacillus of Koch, we find as instruments of development of other varieties of the disease more commonly a variety of pneumococcus which has been called *meningo-coccus,* and *bacillus coli,* and again *staphylococcus aureus* described in an observation which we read in the *Bulletin de la Société medicale des hôspitaux.*

(*c*) *Gastro-enteritis.*—Without doubt the bacillus coli is the most common instrument of gastro-intestinal infections of young infants, but it is not the only instrument. Bajinski has described fifteen species of it in cholera infantum, among which we note strepto-coccus, the proteus, bacillus pyocyanicus, bacillus mesentericus, &c., &c.

Is it possible to look upon any one of these bacilli or even their association as the cause of enteritis? In point of fact, all these bacilli exist in a saprophytic state in healthy subjects. They are therefore compatible with the absence of disease. Now, neither inoculation in animals, nor the proof of agglutination can enable us to determine the rôle which these bacilli play. "Aggultination does not permit us to characterize a race of bacillus coli as peculiar to the acute gastro-intestinal affections of infants (Nobécourt, *Semaine medicale* du 17 Mai 1899, p. 472).

The *Associations* of bacilli do not play a more definite rôle. At first they exist as saprophytes. Inoculated, they produce effects wholly unexpected. An association of bacillus coli and of streptococci produces in the guinea pig *coli bacillose,* and in the rabbit *streptococcy.* It is then the organism and not the bacillus which causes the disease. Sometimes the association of the microbes isolated in normal stools are virulent, while the same associations isolated in pathological stools remain inactive. We therefore conclude with M. Nobécourt "that the bacillus coli ought to be something in the pathogenesy of the gastro-intestinal affections of infants, but this has never been demonstrated in a peremptory manner."

(*d*) *Cholera.*—Koch has discovered in the stools of cholera a spirillum of the form of comma which he considers as the pathogenic microbe of cholera, but numerous researches made since this discovery have demonstrated that there exist a great number of vibrios capable of producing cholera in animals and yet they so differ from one another, as much by their morphology as by their chemical reaction, that it is difficult to consider them as of the same species. The principal vibrios of cholera are: those of Massoa, of Hamburg, of Courbevoy, of Rome, of Angers, of Lisbon, &c. We add that Rumpel and Metchnikoff have found the veritable cholera vibrios in the stools of healthy men and in drinks outside of epidemics. This proves that the cholera vibrios may become saprophytes, then recover their pathogenic action under circumstances which are still ill defined.

2. Our second proposition is thus formulated. *The most undoubted pathogenic microbes inhabit our organisms in the state of suprophytes.*

There is a phrase devoted to designate these microbes: In bacteriology they are called habitual and inoffensive guests of the economy.

It is unnecessary in the present day to insist upon this point in illustration and to cite the bacillus coli, the pneumococcus, all the varieties of streptococcus and of staphylococcus, the vibrio of cholera, the bacillus of Eberth, even the bacillus of tuberculosis, &c., which are met with in a saprophytic state in our cavities.

If it is incontestible that living organisms can carry with mpunity most of the pathogenic microbes, how can we accept the theory that these microbes are veritably the cause of disease, and respond definitely to the definition that we have given of cause? The microbe exists in the organism and yet there is no disease there.

II. *The Microbe is an instrumental Cause.*

the microbe is not the true cause, the proximate cause as the ancients said, of the disease, it is the instrument (agency) which goes to help the evolution of the disease under the direction of the disposition of the organism and with the concurrence of accessory causes. An example will enable one to comprehend the concatenation and hierarchy of these factors.

The bacillus of Koch exists in a latent state in a healthy man but who has inherited the disposition to phthisis. At the age when his parents had fallen sick the disposition of the organism will be ripe for tuberculosis, but almost always a third factor will be necessary in order that the disease will commence its evolution. Whether it is alcoholism, or whether it is want, or whether the subject is attacked by one of those diseases which clinicians have recognized as favorable to tuberculosis, such as measles; influenza, diabetes, immediately the morbid process commences and goes on in its course. Here the bacillus of Koch has been necessary, but it has been long latent and will remain so without the conditions of soil and cultivation which favor its development.

What is the practical conclusion we draw from this exposition?

It is that if the existence of a pathogenic microbe is a necessary element in the pathogeny of infectious diseases, this factor is incapable by itself to produce the disease. Two things are still necessary for its causation. An assemblage of circumstances designated under the name of occasional causes, and above all a soil which permits the microbe to live and to develope.

If one goes to the very bottom of things, this soil is no other than the organism itself, which in immunised individuals completely annihilates the action of the microbes, and in those who are predisposed remains master of the pathological movement, constitutes the forms whence arise the gravity or the benignity of the disease, so that in the same epidemic, some remain exempt, and others become more or less sick, and are cured or killed according as the predisposition is feeble or strong.

The same fact is repeated in our laboratories, where inoculations of a pure culture into the same species of animals and in proportion to the weight of each individual either remain sterile, or render the animals sick or kill them according to their individual predisposition.*

The disposition of the organism is the true cause of disease.

In infectious diseases the pathogenic microbe is the necessary instrument, and we should not forget, to be thorough, that occasional causes are also of great importance. Sometimes an indigestion has been the cause of cholera. Not to fall into the alcoholic habit is the best means of averting tuberculosis, and the use of drinks of the best quality and the absence of fatigue are excellent conditions for avoiding typhoid fever in epidemic times.

The therapeutic conclusion forced upon us by these facts is, that it is absurd to attempt to kill the microbe which multiplies in the diseased organism, and that it is puerile to combat infectious diseases by antiseptics. We have seen that it is the organism which controls and governs the disease. It is to it therefore that the physician should address. The teaching of Hippocrates is always true: *The physician should aid nature.* We ought to interpret and direct her movements, because she alone cures, *medicatrix naturæ.*

Well, the therapeutic doctrine, which I have often expounded, teaches us that the medicament ought to be regulated by the law of similars, whether that medicament is a serum or a pharmaceutic preparation.

[In the same month (June) that the above article appeared in *L'Art Medical* there appeared in the *Homœopathic World* a similar article under the title of "The Cult of the Microbe" from the pen of Dr. Dudgeon. We give below the concluding portions of this article as showing the strong opinion on the subject held by the Nestor of the homœopathic profession in England.

"In conclusion it may be said that certain contagious diseases are sometimes, but not always, associated with certain microbes, which cannot be considered as the causes of these diseases, but rather as their parasites; that the presence of some of them, as the *staphylococcus pyogenes aureus,* is distinctly salutary; that all the mucous orifices of the body in the healthy state harbour many different species of bacteria, even those believed to be of the most virulent character; that some of the most markedly infectious diseases, such as rabies, small-pox and syphilis, have no specific microbe; and that the attempt to cure any disease by the destruction of its peculiar microbe has never succeeded, and can never be [illegible] to succeed, for it is not the microbe that causes disease but some virus the exact nature of which, like that of serpents' venom, has not yet been discovered, but the effects of which are manifest. A knowledge of the various kinds of microbe associated with different diseases may be occasionally useful to corroborate the diagnosis deduced from other sources, but its value, owing to the frequent absence of its supposed specific microbe from the diseased part, and the presence of the same microbe in other diseases and even in the secretions of healthy persons, besides the extreme technical difficulty of demonstrating the tiny organism, which cannot as a rule be undertaken by the ordinary medical practitioner, but must be performed by a bacteriological expert, will always render this aid to diagnosis extremely uncertain, and not comparable in value to the other time-honoured methods of diagnosing disease.

"The study of microbes may perhaps prove interesting to naturalists when once it has been determined whether they belong to the animal or vegetable kingdom. Perhaps they belong to neither, but are common to both, like protoplasm, which they resemble by being structureless, or at least destitute of organs but endowed with vitality and capable of unlimited multiplication in favourable conditions. But bacteriology as an adjuvant to medical science and the therapeutic art is utterly useless and misleading, and the sooner medicine dissociates itself from this barren study the better it will be for therapeutics."

We are inclined to think that Dr. Jousset has taken a more correct view of the question. We do not think we are justified in altogether ignoring the influence of microbes in the etiology of disease. We do not believe that they are constant factors in the production of disease even when the organism is predisposed. There are other factors which without them can give rise to the same particular diseases which they can produce, and these factors are not unoften inorganic. When the vital resistance is too great for them, the microbes are powerless. But we believe that their repeated invasions or their invasions in large numbers, may and often do act pathogenetically on the system even when not predisposed. They generally act most virulently when the vitality is considerably lowered. This was sadly illustrated in the cases of Dr. Hermann Müller of the

Pathological Laboratory of the Allgemeines Krankenhaus (General Hospital) of Vienna, of the laboratory attendant, Barisch, and of a nurse. Barisch, who had lowered his vitality by drink, caught the plague from cultured bacilli the remote descendants of the Bombay plague bacilli, and Dr. Müller and the nurse caught the disease from him by neglecting to take adequate food and rest and sleep from their devotion to duty which overcame all sense of danger and of the necessity for taking personal precautions.

Of the impotency of the pathogenic microbes when the system is powerfully resistant or when it is not favorable to their growth and development we have good analogical evidence in ordinary plants grown on impoverished or too limited soil, and even in starved or ill-fed animals. With stinted growth and development brought about in this way, both plants and animals lose not only their vigour but even their virulence when they happen to be poisonous or venom-secreting. The Ficus religiosa (অশ্বত্থ) and the Ficus Indica (বট) are species of figs which are notorious for their rapid growth and attainment of large dimensions. Some years ago we planted two plants of these species in the same earthen pot with a scanty supply of earth, and they are there barely existing and scarcely three feet high, thus showing the necessity of a plentiful supply of proper soil for the exhuberant growth of plants. Similar examples of degeneration of animals from insufficient food and from unfavourable climatic influences may be cited. As living beings the micro-organisms obey the same laws. And thus discrepancies and anomalies that are often met with as regards their influence in the causation of disease are explained.

Bacteriology has not yet passed the stage of infancy, but it is progressing with strides. The lessons we have already learnt from it in the direction of preventive medicine are too important to be overlooked. Whether it will be of use in the therapeutic part of medicine has yet to be seen. If ever it comes to be helpful in this direction it will only be, as Dr. Jousset has very properly said, under the guidance and control of the law of similars.—EDITOR, *Cal. Journ. of Med.*]

SLEEP AND SLEEP-PRODUCING REMEDIES.

Life is action, and rest is a necessity of living beings not only for the prolongation of the duration of their lives but also for the maintenance of their health. If there were no rest life would soon exhaust itself and come to an end. On the other hand, there cannot be absolute rest, for that would mean cessation of all action, which in the case of living beings would be cessation of life or—death. The rest which living beings need is therefore only partial. It consists in a relaxation or slowing of the active processes which constitute life.

It is to be observed that this rest that living beings require is periodical, and nature has wisely provided for it in their very constitution, thus placing it beyond the control of even those of her creatures whom she has endowed with a will to regulate and control their actions. Living beings are so constituted that rest and work alternate. As living beings rise in the scale of conscious existence, besides alternations of work and rest of short duration, inseparable from every vital process going on in the minutest cell, there occur longer periods of work and rest, till nearly the whole day is marked off into two periods, one for work and one for rest, corresponding generally with what are ordinarily called day and night. Such rest is called sleep, and has, in ordinary language, been applied to beings endowed with consciousness, though the word itself originally came from a root which meant lax or loose, pointing to relaxation as the essence of sleep. Sleep is thus the longest periodical rest of animated or conscious beings. "Naturalists have observed many of the lower animals apparently in a state of sleep. Insects, crustaceans, fishes, reptiles, may all be observed occasionally to be almost motionless for considerable periods of time. The sleeping of birds is familiar to all, and in these there are anatomical arrangements by which the bird may, like the crane, sleep perched on one leg, or grasping a branch with both feet, like perching birds generally, without any muscular effort and consequently without fatigue." (Dr. McKendrick in *Encycl. Britannica*, 9th Ed.)

But though the word sleep has been restricted to the periodical rest of beings endowed with consciousness, phenomena analogous to this condition are observed even in plants The closing of their flowers, the bending of their petioles, the folding up of their leaves, the bending down of their leaf stalks, generally at the time when the sun withdraws his rays from the earth, are phenomena which even to common appearance look like sleep. And just as in the case of animals, the sleep of plants is not always nocturnal, though generally it is so, some plants closing their flowers in different hours of the day, as for instance the crocus which is a morning flower, and closes immediately after mid-day or noon. To render the analogy complete it has yet to be determined whether any reparative process goes on in the plant-economy during this apparent repose as it does in the case of animals.

Dealing with sleep as manifested in animals, or living beings with consciousness, the Russian *savante* Marie de Manacéine has defined sleep as the repose or resting time of consciousness. "In presence of the inevitable necessity of sleep for beings possessed of a central nervous system, we are forced to conclude," says she, "that conscious life needs for its accomplishment an expenditure of energy so intense that while it is being effected the processes of nutrition and the reconstitution of the tissues cannot be completely carried on, and that sleep—the repose of consciousness—is needed for the plastic nutrition of the organism and the accomplishment of its vegetative life." This definition touches only the psychological aspect of sleep. As a statement of a most important, though a partial fact, it is admirable, but as Prof. Bradbury has well observed it is "not an explanation."

We need hardly remind our Indian readers that according to some of our ancient sages there is no repose of consciousness, and they have gone so far as to say that sleep is a *faculty* of the mind just like memory; it is the faculty by which we become conscious of unconsciousness! Were it not so, it is said, we could not know or remember that we ever had or have sleep. Subtlety of philosophical reasoning could not go further. It is true that we have some remembrance of partial, restless, dreamy sleep. But it is questionable if we can have any remembrance of true or sound sleep. The knowledge or belief that we had slept is not based upon an actual remembrance of the true sleeping state, but is an inference from dreams and associated phenomena, and the observation of the sleeping state in our neighbours. Sound, profound sleep is rare indeed, but that it does exist there cannot be the least doubt, and in this state consciousness is in abeyance.

Our ancient medical authors have placed sleep among the four peremptory desires which every individual in every day life is urged by, and which must be satisfied for the preservation of health. These are hunger, thirst, sleep, and the sexual desire. We do not think that the last-mentioned desire can come under the category of peremptory in all stages of life and in all individuals of our species. But that sleep is a peremptory desire like hunger and thirst must be admitted by all. "It is on record," says Dr. Carpenter, "that during the heat of the battle of the Nile, some of the over-fatigued boys fell asleep on the deck: and during the last attack upon Rangoon, the Captain of one of the war-steamers most actively engaged, worn out by the excess of continued mental tension, fell asleep, and remained perfectly unconscious for two hours, within a yard of one of his largest guns, which was being worked energetically during the whole period. So even the severest bodily pain yields before the imperative demand occasioned by the continued exhaustion of the powers of the sensorial centres; thus Damiens slept upon the rack, during intervals of his cruel sufferings; the North American Indians at the stake of torture will go to sleep on the remission of agony, and will slumber until the fire is applied to awaken him." This irresistible character of sleep, assimilating it to hunger and thirst, will be seen recognized in the following excellent description by Dr. McKendrick of the advent of sleep:

"The approach of sleep is usually marked by a desire for sleep, or sleepiness, embracing an obscure and complicated group of sensations, resembling such bodily states of feeling as hunger, thirst, the necessity of breathing, &c. All of these bodily states, although on the whole ill-defined, are referred with some precision to special organs. Thus hunger, due to a general bodily want, is referred to the stomach, thirst to the fauces, and breathing to the chest; and in like manner the desire for sleep is referred chiefly to the region of the head and the neck. There is a sensation of weight in the upper eyelids, intermittent spasm of the sub-hyoid muscles causing yawning, and drooping of the head. Along with these signs there is obscuration of the intelligence, depression both of general sensibility and of the special senses, and relaxation of the muscular system. The half-closed eyes tend more and more to close; the inspirations become slower and deeper; the muscles supporting the lower jaw become relaxed, so that the mouth opens; the muscles of the back of the neck that tend to support the head also relax and the chin droops on the breast; and the limbs relax and tend to fall into a line with the body. At the same time the hesitating utterances of the sleepy man indicate vagueness of thought, and external objects gradually cease to make an impression on the senses."

Then follows a description of the many gradations in the depth and character of sleep: "In some cases the sleep may be so light that the individual is partially conscious of external impressions and of the disordered trains of thought and feeling that pass through his mind, constituting dreams, and these may be more or less vivid, according to the degree of consciousness remaining. On the other hand, the sleep may be so profound as to abolish psychical phenomena: there are no dreams, and when the sleeper awakes the time passed in this unconscious state is a blank. The first period is the most profound. After a variable period, usually from five to six hours of deep sleep, the faculties awaken, not simultaneously but fitfully, so that there are transient periods of consciousness. This is the time of dreaming. As the period of waking approaches the sensibility becomes more acute, so that external impressions are faithfully perceived. These impressions may influence and mould the flow of images in the mind of the sleeper, frequently altering the nature of his dreams or making them more vivid. The moment of waking is usually not instantaneous but it is preceded by an intermediate state of partial consciousness, in which there are feelings of a pleasant lassitude, a sense of repose, a luxurious abandonment of the body to any position in which it may happen to be, and a strange play of the mental faculties that has more of the character of an 'intellectual mirage' than of consecutive thought."

Physiologists have attempted to measure the depth or intensity of sleep, and of all the methods that have been devised for the purpose the best has been found to be to drop a metallic ball on a flat metallic surface from different heights, that is, the intensity of sleep is measured by the intensity of the sound that is necessary to awake the sleeper. In this way Kohlschütter, Mönninghoff and Peisbergen have found that the depth of sleep increases during the first and second hour, the deepest being reached in about an hour and three-quarters, that after this it begins decidedly to decrease, but that it increases again till it reaches a certain level at which it remains for some time. It is not a little remarkable that after each awakening the depth increases, even when the awakening is just short of complete. From these experiments the important fact has been elicited that sleep reaches its maximum intensity or depth or culminating point during the first two or three hours.

On closer observation important physiological changes are found to occur during sleep, and they are referrible to all the organs and systems of the body. Thus, in the circulatory system we find that the action of the central organ, the heart, is more slow and less energetic, as indicated by the less frequency of the pulse, than in the waking state. As a consequence there is a fall in the blood pressure and decrease of the internal temperature to the extent of from half a degree to two degrees Fahr. In the respiratory system, as observed in men, the respiration is slower and more thoracic than abdominal, the inspiration is more prolonged occupying about ten-twelfths, instead of eight-twelfths, of the respiratory period; and there is greater absorption of oxygen, but lesser elimination of carbonic acid.

The slackening of both the circulation and the respiration, together with the increased absorption of oxygen and the diminished elimination of carbonic acid, would lead us to expect some changes in the circulating fluid But nothing definite has yet been observed, and that all that can be inferred is from observations that have been made on subjects of sleeplessness and on animals which were artificially deprived of sleep, as also on hybernating animals. In the latter the diminution of the white corpuscles was as remarkable a fact as the diminution of the red corpuscles in the former. But it would be premature as yet to conclude from these facts that sleep tends to produce an increase of the red corpuscles. More precise and direct observation is necessary to be decisive on the point.

By an ingeniously devised instrument, by Mosso, the plethysmograph (volume-recorder), the volumes of different parts of the body, of the abdomen, thorax, and extremities, have been attempted to be measured during sleep. But the results have not been satisfactory. From the latest experiments of Mosso and of Prof. Holwell it appears that there is a decided increase of volume of the arm. "It was found that from the moment when the subject closed his eyes the (plethysmographic) curve began to fall, that is, that the portions of the arm within the plethysmograph undergo dilatation. As sleep comes on, the curve continues to sink with fair regularity, falling to its lowest point in one to one and a half hours, when the dilatation of the arm reaches practically its maximum extent, remaining at this level for an hour or two within certain rhythmical variations. Then the curve shows a steady rise, quite gradual for the first hour or more, but much more rapid for the half-hour or so preceding final conscious awaking." Whether the dilatation of the arm is due to swelling of its skin from a relaxation of tone of vessels of the latter, as Prof. Holwell thinks it probable, or whether it is due to swelling of the whole arm from the same condition of all its vessels, must await further experiments for a satisfactory solution.

As regards the internal organs it has been observed that the secretions are diminished in amount and that the peristaltic movements of the stomach and of the intestines are either interrupted or rendered feebler and less rapid. In the case of a patient with a gastric fistula Busch had observed that this enfeeblement of the movements took place during nocturnal sleep, and not during sleep in the day time. The kidneys, the salivary and other internal glands have been observed to secrete less during sleep. In the case of the salivary glands, however, their secretion is often found to run out of the mouth during sleep, but this perhaps is an abnormal condition. Just the reverse of this takes place in the case of the glands situated on the external surface of the body, that is, the sweat glands of the skin, which are in energetic action during sleep as is evidenced by the copious perspiration which runs out from a sleeping man. This excessive action of the sweat glands is due to the dilatation of the vessels of the skin which again is probably due to an anæmiated condition of the sweat-centre situated in the middle of the medulla oblongata. Marie de Manacéïne rightly thinks that it is in consequence of this active perspiration that we are more liable to catch cold during sleep than when awake.

We have said that the dilatation of the cutaneous vessels during sleep is probably due to anæmia of the sweat-centre. This leads us to consider the condition of the nervous system as regards its circulation. The views on this subject have changed within the last half century in the diametrically opposite direction. From ancient times coma was looked upon as a deeper manifestation of sleep, and coma was known to arise from congestion of the brain. Hence it was natural to suppose that sleep was due to the same condition, and this was apparently supported by the fact of flushing of the face and congestion of the eyes. Notwithstanding that Blumenbach had observed a condition of anæmia of the brain during sleep in a case of injury of the skull in which the brain was exposed, the theory of cerebral congestion as the cause of sleep, based as it was upon a false analogy between coma and sleep, was held down to the middle of the century, and by such men as Cabanis, Marshall Hall, Carpenter, Sieveking, and others.

It was Arthur Dunham who confirmed the observation of Blumenbach by a conclusive experiment in 1860 which consisted in trephining the skull of a dog in the parietal region and inserting a watchglass into the aperture both to exclude the effects of the atmosphere and to enable him to observe the changes in the brain through it. He has summarized his results as follows: " (1) Pressure of distended veins on the brain is not the cause of sleep, for during sleep the veins are not distended; and, when they are, symptoms and appearances arise which differ from those which characterize sleep. (2) During sleep the brain is in a comparatively bloodless condition, and the blood in the encephalic vessels is not only diminished in quantity, but moves with diminished rapidity. (3) The condition of the cerebral circulation during sleep is, from physical causes, that which is most favorable to the nutrition of the brain tissue; and on the other hand, the condition which prevails during waking is associated with mental activity, because it is that which is most favorable to oxidation of the brain substance, and to various changes in its chemical composition. (4) The blood which is derived from the brain during sleep is distributed to the alimentary and excretory organs. (5) Whatever increases the activity of the cerebral circulation tends to preserve wakefulness; and whatever decreases the activity of the cerebral circulation, and, at the same time, is not inconsistent with the general health of the body, tends to induce and favor sleep."

Other observers, notably Hammond, Weir Mitchell, Ehrmann, Salathé, François Franck, and more especially Mosso, have repeated the experiments of Durham and come to the same conclusion. There was, one vitiating element in all these experiments, and that was that they were made on animals previously narcotized by either chloroform, morphia, or chloral hydrate. The experimenters, however, took care to wait till the narcosis had completely passed off, and the animals had natural sleep after being fed. The experiments of Mosso were particularly valuable inasmuch as by the plethysmometer (an invention of his own) he determined that while there was a diminished amount of blood in the brain there was an increased amount in the extremities, and that there were rearrangements in the distribution of the blood when the sleep was disturbed. External stimuli, not strong enough to rouse the sleeper, caused a contraction of the cutaneous vessels and a determination of blood to the brain; and when these stimuli were strong enough to cause awakening, this determination of blood was found to be much greater.

The anæmic condition of the brain, comparatively to the rest of the body during sleep, was demonstrated without the shadow of a fallacy by the experiments of Tarchanoff which were carried on in young puppies which, from the easy character of their sleep, had not to be narcotized preparatory to the opening of their skulls, and the observer was thus enabled to watch the brain changes during normal sleep. It was seen that the brain became markedly pale every time that the puppy fell asleep, and that the sleep was prevented whenever the head was depressed below the level of the body by which position there was caused a determination of blood to the brain.

In all the above experiments it was seen that the anæmia of the brain began to appear just *before* the advent of sleep, and hence could not have been an effect of sleep. Whether this anæmia is the only cause, or only one of the causes, has to be determined by further research.

(To be continued.)

EDITOR'S NOTES.

Cancer of Pancreas.

Tolot (*Lyon Médical,* March 19th 1899) reports a case of cylindrical epithelioma confined to the body of the pancreas. The patient was an adult male, subject for a year to a pulsating tumour in the epigastrium, with a distinct souffle, but no expansion as in aortic aneurysm. There was cachexia, not advanced at the date of death—vomiting was absent. Icterus was not observed till a few days before the patient's decease; the urine was then mahogany-coloured, without bile-pigment reaction. The gall bladder was not dilated. At the necropsy the body of the pancreas was found to be the seat of cancer. It adhered to the stomach near the cardiac end, the coats, except the mucous membrane, being infected. The head of the pancreas was quite healthy. In the liver were large metastatic foci, not the small spots, like candle-grease stains, often seen in association with pancreatic-tumours. The seat of the tumour explained the absence of any symptoms of compression of the biliary ducts. The growth had originated in the excretory ducts of the pancreas.—*Brit. Med. Journ.*, June 10, 1899.

The Pulse in Pregnancy and the Puerperium.

Audebert of Toulouse (*France Méd.*, No. 20, p. 317, May 19th, 1899) has carefully investigated the pulse in 50 women during pregnancy and the puerperium, excluding cases in which the temperature rose above 37.8° C. During pregnancy the pulse-rate was higher than what it normally is outside the gravid state; it was from 85 to 88 per minute, instead of 75. During the eight or ten days before delivery it rose in one-third of the cases to 90 or 92. In the puerperium a slowing of the pulse was constant when the pregnancy and labour had been normal. This slowing was very marked during the first three or four days of the lying-in period, the average being 67. From the fourth to the eighth day it was 75, and from the eighth to the twelfth about 80. The minimum was rare on the first day; usually it occurred on the second or third, and Audebert never found it less than 60, although other observers have recorded 40 and even 30. In some cases this physiological slowing of the pulse does not occur. Lactation does not serve to explain these exceptions, neither do prolonged resting in pregnancy nor the premature induction of labour. Excessive duration of labour, however, has a distinct effect: thus in a primipara delivered after 45 hours, not only was there no slowing, but the rate, which had been 100, rose to 120. The length of labour also probably accounts for the fact that the slowing is less marked in primiparæ than in multiparæ. Albuminuria also plays an important part; in 11 albuminuric women the average rate was 84 before and 76 after confinement. These observations were communicated to the Obstetrical Society of France at its meeting of April 7th and 8th.—*Brit. Med. Journ.*, June 10, 1899.

Death from Tuberculin.

Howard L., 28 years of age, a resident of this town (Attleboro, Mass.), was indisposed in the fall of 1898, troubled with hoarseness and gastric ailments. A neighboring physician was called who had attended the young man's family for many years. This physician commenced in September, 1898, to inject Tuberculin (Koch's), and up to December had injected this toxin twice a week for several weeks, and then once in two weeks the remainder of the time. What was the result? At the time of the commencement of this treatment Mr. L. could work and eat comfortably, soon his stomach rebelled against food and the bowels became constipated, his hoarseness increased and distressing suffocative spells set in every forenoon lasting an hour or so; he would then be able to breathe well the rest of the day. In January, 1899, I was summoned hastily in the night and found him laboring for breath, the noise of his breathing audible from the street. His first words were: "My God, help me; relieve me, Doctor, or I shall die." His expectoration, which was scanty, was dark green, lumpy, tubercular matter. Examination of the throat revealed a larynx full of tubercular nodes. I saw that his end was near, and told his parents with whom he lived I would rather they would call their family physician. But as they insisted upon my keeping the case I prepared him some medicine which relieved him, but the next morning he was again worse, and from that time on he was in agony from efforts to get breath. To relieve him intubation (through the mouth) was resorted to, but he could not keep the tube in. He died that afternoon, his great agony being relieved only by resort to chloroform applied locally. This man had been wild in his youth, had had gonorrhœa several times, and came of tubercular stock. I asked him if he had told his former physician these things and he said he had. This case is typical as far as the use of tuberculin by injection is concerned, of a score I could mention who have died under the hypodermic use of tuberculin in this vicinity the past two years.—W. W. GLEASON, M.D., Attleboro, Mass. in *Journal of Homœopathics,* May 1899.

Removal of the Transverse Colon and Partial Resection of the Pancreas and Stomach for Carcinoma.

In the *St. Paul Medical Journal* for March Dr. A. Schwyzer has published a case in which this remarkable and possibly unique operation was performed. A man suffered from abdominal pain and passed shreddy masses, partly whitish, partly bloody. He became steadily weaker. In the umbilical region was a hard moveable mass directly under the thin abdominal wall. Carcinoma of the transverse colon was diagnosed. Laparotomy was performed by a median incision in the umbilical region. The transverse colon was represented by a tumour of twice the size of a fist. It was intimately connected with the stomach for a length of four inches. As the fate of such cases is pitiable it was decided to attempt removal if only for temporary relief. The stomach was separated from the tumour by dividing the gastro-colic ligament and resecting the large curvature for about seven centimetres. The wound was closed by a double continuous suture. The meso-colon was then divided to the left of the tumour and the gut was clamped and divided. In further separating the growth profuse venous hæmorrhage occurred which must have come from the inferior mesenteric vein or one of its branches. The hæmorrhage was difficult to arrest. As fatal disturbances were feared from complete transverse ligation three artery forceps were applied to the wound which was sutured, leaving as much of the lumen of the vein as possible. The apex of the tumour was then found to extend into the pancreas, which had to be resected. Alarming hæmorrhage then occurred from the superior mesenteric vein which was controlled by a few forceps. The remaining small portion of the pedicle was divided and the hepatic flexure of the colon was cut across between clamps. Access was then possible to the wound in the vein which was sutured. The divided ends of the colon were united by a continuous double silk suture. The upper portion was hypertrophied and dilated and its circumference was greater than the lower portion in the proportion of three to two. This difficulty was surmounted by stretching the lower portion while suturing. Recovery ensued. Microscopic examination showed that the tumour was a myeloid carcinoma. Four months after the operation the patient felt well; he was free from pain and had gained 25 lbs. in weight.—*Lancet,* June, 3, 1899.

The Roentgen Rays in Incipient Phthisis.

At the sixteenth annual meeting of the American Climatological Association held in New York City, May 9th, 10th, and 11th, 1899, Francis H. Williams, of Boston, read a paper on Roentgen Ray Examinations in Incipient Pulmonary Tuberculosis (New York *Med. Record,* May 13th). In 45 adults examined with the *x* rays, he has ascertained that the average excursion of the diaphragm on the left side was 2½ inches and on the right side about 1½ inch more. He had been impressed with the association of rheumatism and tuberculosis. In 5 cases the *x*-ray examination had given notice of changes in the lungs before the physical signs. If the area of increased density was much below the surface of the lung, as, for instance, in a central pneumonia, its presence would not be recognised by auscultation and percussion, but its shadow would be seen on the *x*-ray screen as surely as though this area were more superficial. By careful experimentation he had demonstrated that a lung the seat of pneumonia or tuberculosis offered ten times more resistance to the *x*-rays than did a healthy lung. The diagnosis of tuberculosis was not by the *x*-rays alone, but in some instances it had certainly given early notice of a departure of the lung from the normal, and this intimation, taken in connection with history and rational symptoms, afforded a valuable basis for an early diagnosis. In cases of pulmonary tuberculosis the *x* rays showed the apex of the lung darkened and the excursion of the diaphragm shortened. He had made more than

2,000 examinations of the thorax with the *x* rays and had never seen any injury result therefrom. In the discussion Frederick I. Knight of Boston said that in his experience many months often elapsed after evidence of the initial catarrh of a tuberculosis before it was possible distinctly to recognise pathological changes in the lung by the alteration of the percussion note. J. E. Stubbert said that the fluoroscopic screen was far more accurate and convenient than the fluoroscope. He had yet to see an incipient case of tuberculosis that could not be accurately diagnosticated by the *x* rays. Examination by the *x* rays was especially useful in cases in which tuberculous foci were scattered throughout the lungs, a class of cases in which the physical signs were apt to be equivocal. Williams, in reply, said that the illustrative cases that he had reported had been for the most part those in which consolidation had been demonstrated by the *x* rays, although not even moist *râles* could be heard on auscultation. Emphysema could be recognised easily and certainly with the aid of the *x* rays.—*Brit. Med. Jour.*, June 3, 1899.

Transplantation of Nerves.

In a certain proportion of cases of injuries to nerves the ends cannot be brought together and a portion of nerve obtained from one of the lower animals or from an amputated limb has been implanted. Dr. R. Peterson has contributed an important article on transplantation of nerves to the *American Journal of the Medical Sciences* for April which contains an original case and an analysis of the small number of previously recorded cases. A man, aged 24 years, was severely injured in the right wrist by a circular saw. The ulnar artery and a number of flexor tendons were severed. The latter were immediately sutured. He lost sensibility in the hand and later there were trophic changes—glossy skin, corrugated nails and ulceration of the skin, and marked atrophy of the small muscles. All the digits on the palmar aspect and the inner surface of the thumb were anæsthetic. The muscles of the hand supplied by the median and ulnar nerves gave the reaction of degeneration. Five months after the injury the divided ends of the median nerve were exposed. They were found to be united by connective tissue. The proximal end formed a hard bulb. The connective tissue and the bulb were removed, leaving a gap of three and a half centimetres. So much force was required to bring together the cut ends that transplantation of nerve was decided upon. Four centimetres of the sciatic nerve of a young black hound were sutured between the ends with kangaroo tendon. A similar operation was performed on the ulnar nerve. On the following day distinct return of sensibility in the thumb was found; the fingers could not be tested without disturbing the bandage. Two months after operation the skin had lost its shiny look and appeared normal and the muscles, though still atrophied, were regaining power. A month later sensibility was complete except on the dorsal surface of the third phalanges of the second, third, and fourth fingers. The only anæsthetic areas on the palmar aspect were on the second and third phalanges of the third and fourth fingers and on the third phalanx of the second finger. There are 20 recorded cases of transplantation of nerves. The median nerve was operated on in seven cases, the ulnar in three, the median and ulnar nerves in two, the musculo-spiral nerve in seven, and the sciatic in one. There were eight primary and 12 secondary operations. The time from the injury to the operation varied from 48 hours to one and a quarter years. Eight out of the 12 cases of secondary operation showed improvement in sensibility or motion while only four out of the eight cases of primary operation improved. The interval between the ends of the divided nerves varied from three to 10 centimetres but distance did not seem to affect the result. In nine cases the transplanted segments were from the sciatic nerves of dogs, in three from rabbits, in one from a kitten, in one from the spinal cord of a rabbit, and in five from recently amputated limbs. In one case an inch of the sciatic nerve which had been excised was itself transplanted. In nine cases catgut was used to unite the implanted segments to the divided ends, in three silk, and in one kangaroo tendon. No case recovered entirely. The nearest approach to complete recovery took place in the case longest under observation, in which at the end of six years sensibility had entirely returned and the only weak muscle was the abductor pollicis. In three cases there was practically recovery of sensibility and motion and the hand was useful. Sensibility completely returned in four cases, nearly completely in three cases, and was improved in four cases. Muscular power improved in four cases. There was improvement in either motion or sensibility in 12 cases, and no improvement in either in six cases. The average time in which sensibility appeared after the operation was about 10 days ; motion returned in about two and a half months.—*Lancet*, June, 3, 1899.

The Great-toe Reflex: a New Diagnostic Sign in Disease of the Spinal Cord.

J. Babinski (*Société de Biolog. de Paris*, February, 1896) announced a new clinical symptom observed by him to be characteristic if not pathognomonic of lesions affecting the pyramidal tract of the spinal cord. It consisted in the fact that the normal plantar reflex, namely, flexion of the great toe followed by flexion of the other toes, was replaced by an extension of the great toe followed by that of the other toes, during conditions of disease affecting the pyramidal tract, and which he described as Le Phénomène des Orteils (*La Presse Medicale*, July 27th, 1898). Apparently this phenomenon of reflex extension of the toes is not obtained in functional disease (hysterical, flaccid, or spastic paraplegies), which gives this sign a further value in differential diagnosis. James Collier (*Brain*, Spring, 1899) gives the records of an extensive series of observations made to elicit the presence and diagnostic value of this sign in 500 patients, namely, 100 adults at a general hospital, all free from spinal or nervous disease, 100 children at the hospital in Great Ormond Street, and 300 cases of nervous diseases at the National Hospital, Queen Square.

The general conclusions arrived at were as follows: (1) In infants the plantar reflex is naturally of the extensor type, and continues as such till the child is able to walk (between the second and third years), but in feeble children, and especially in rachitic children, this may be delayed till the fourth year. (2) In cases of total transverse lesion of the spinal cord the plantar reflex may be entirely absent, but if present the reflex takes the form of sluggish extension of the toes (3 cases). The cord lesions in these cases were at about the mid-dorsal segments of the cord. (3) In 36 cases of myelitis, including partial compression-paraplegia, 34 showed the extension response on both sides. (4) In 36 cases of organic hemiplegia, 28 showed it in the paralysed limb, while the sound limb gave the normal flexor response, and 3 cases gave the extension sign on both sides. (5) Six cases of Friedreich's disease, and 3 each of syringomyelia and amyotrophic lateral sclerosis, all gave the extensor response. (6) Out of 40 cases of epilepsy, 38 exhibited the normal or reflexor response in the periods free from fits; but immediately after fits, especially severe fits, the extensor response could be elicited, and was found to last a few minutes. Where convulsions were unilateral the extensor response could be elicited only on the convulsed side. (7) In 16 cases of cerebral tumour not involving apparently the pyramidal tracts, the responses obtained were of the normal flexor types, and the same was the case in three instances of cerebellar tumour. (8) In 35 cases of functional nervous disease the flexor response was obtained in 28, while in the remaining 7 it was abolished (hence the value of the extension response as indicative of organic disease in the pyramidal tract). (9) In 10 cases of paralysis agitans the normal flexor phenomenon was obtained, though sluggish. (10) In 28 cases of tabes dorsalis, 5 gave rise to irregular and uncertain movements, 11 showed an absence of the plantar reflex, while 9 gave the normal type of flexor response. (11) In 15 cases of peripheral neuritis, 6 exhibited no reflex, while 9 gave a slight response of the flexor type. (12) In 20 cases of chorea, and including 3 cases of Huntington's chorea, a normal flexor response was obtained in every case. (13) Finally, in cases of neurasthenia and of sciatica the normal plantar reflexes were obtained. It is pointed out by both Babinski and Collier that in strychnine poisoning the normal flexor response may be gradually replaced by an extensor response in proportion as the reflex excitability of the cord rises and the cerebral control is diminished; and that similar condition, but of more lasting and persistent character, occurs in tetanus. As recovery comes on the normal type of flexor response takes its place in both these affections.—*Brit. Med. Jour.*, June 3, 1899.

A New Classification of Mental Diseases.

In the *Journal of Mental Science* (April, 1899) Dr. Lloyd Andriezen, at the close of a lengthy contribution on the "Bases and Possibilities of a Scientific Psychology and Classification in Mental Disease," propounds a classification of the insanities which is stated to be "based upon fundamental facts of evolution, upon deep-seated affinities in connexion with pathological findings, and upon facts of both etiological and clinical import." This classification is said to be "a natural one at the same time practically useful," and it is as follows. There are five main groups of insanity and the words used to designate them explain themselves viz. :—

1. *Aphrenia.*—Arrests of cerebral (psychical) development, with absence or deficiency of evolution of personality. (*a*) Idiots of vegetative grade; helpless, wet and dirty, not educable. (*b*) Idiots of medium and higher grade (many microcephalic, cretinoid, epileptic, partially paralytic, or simple genetic idiots); slightly improvable and educable.

2. *Oligophrenia.*—Enfeeblements of cerebral (psychical) development, with a parallel enfeeblement in the evolution of personality. (*a*) Imbeciles of low grade; not educable. (*b*) Imbeciles of medium grade; partially educable and improvable. (*c*) Imbeciles of higher grade; partially educable and improvable; often with anti-social instincts. (*d*) Feeble-minded children; partially educable and improvable; often with anti-social instincts.

3. *Paraphrenia.*—Anomalies and perversions of cerebral (psychical) development, with corresponding irregularities and perversions in the evolution of personality. (*a*) *Paraphrenia mitis.* Disharmonies of psychical development with an unbalanced disposition of the ego; the so-called borderland cases between sanity and insanity—e.g., eccentrics, cranks, mattoids, some types of revolutionists, mystics, &c., (*b*) *Paraphrenia gravis.* Grave anomalies and perversions of mind and personality. This includes eight groups—viz.: (1) with mental obsessions and irresistible impulses (e.g., agoraphobia, folie du doute, dipsomania, kleptomania, &c.); (2) with delusions of rudimentary type (e.g., psychopaths of the litigious, erotic and jealous, mystico-religious and other types); (3) with predominant perversion of moral and sexual nature (e.g., moral insanity, uranism, masochism, saidism, &c.); (4) with predominant criminal instincts e.g., congenital criminals of the active and of the neurasthenic types); (5) with hallucinations and systematised delusions and transformation of personality (e.g., various types of "paranoia"); (6) with cyclic or periodic attacks (e.g., circular insanity and folie à double forme); (7) associated with and modified by grave neuroses (e.g., epileptic, hysteric, choreic, hypochondriacal, and neurasthenic types); and associated with the evolution of puberty and adolescence (e.g., hebephrenia).

4. *Phrenopathia.*—Morbid conditions or derangements occurring in brains of nearly full development and of apparent previous health, with corresponding morbid alteration of the personality. This includes eight types—viz: (1) vesanic type (e.g., melancholia, mania, stupor, acute mental confusion, and asthenic confusion); (2) toxic type (e.g., alcoholic delirium tremens, mania à potu, chronic alcoholic insanity, lead encephalopathy, morphinism, cocainism, ergotism, and pellagra); (3) febrile micro-parasitic type (e.g., some puerperal insanities, delirium acutum, and the grave delirium of influenza, scarlet fever, acute cerebral meningitis, tuberculous meningitis &c.);

(4) diathetic group (e.g., myxœdematous, goitrous, acromegalic and possibly diabetic insanity, post-syphilitic pseudo-paresis, &c.); (5) chronic meningo-encephalitis of progressive type (e.g., general paralysis of the insane); (6) involutional type (e.g., climacteric insanity and the chronic cerebral atrophy and senile insanity of middle and old age); (7) traumatic type (e.g., the "cerebraux" of Lasegue); and (8) neoplastic and thrombotic type (e.g., of cerebral softenings, gliomata and other neoplasms, &c.).

5. *Lipophrenia.*—Terminal conditions of mental dissolution secondary to previous insanities. These comprise many and varied types and groups with different antecedents but with one terminus and goal to which they all tend.

The basis of the above classification is the principle that abnormalities (morbid changes and alterations) may and do occur "at all stages in the evolution of the brain and of its function, from the fœtal (vegetative, somnolescent) to the sexually mature (adolescent) stage," with corresponding variations in the evolution of personality, of bodily conformation and appearance, and of conduct and capacity for intellectual, social, and ethical life. Thus studied it is found that the insanities fall into five groups which assume a serial and tree-like arrangement. At the lower end of the series, where hereditary fœtal and intrinsic vice of organisation preponderates, we find Groups (1) and (2)—viz., the profound arrests (*aphrenia*, idiocy and enfeeblements (*oligophrenia*, imbecility) of cerebro-psychical development. At the other end of the scale are grouped the morbid conditions which affect brains of nearly full cerebro-psychical development and of apparent previous health. These comprise the various types and classes of the *phrenopathies*, Group (4). Between these extremes comes a "degenerative" group with anomalies of evolution in the sense alluded to and classified under *paraphrenia*—i.e., Group (3). Fifth and last comes the group which includes the wrecks and remnants of previous mental disease, "chronic derelicts after storms, deprived of their mental equipments and reduced to low grades and levels of mental life—a highly motley, artificial, and lumber-room group really—the chronic dements." These constitute the terminal Group (5) which for uniformity of nomenclature is termed *lipophrenia*. It will be seen from the details given above that while some of the groups are sharply marked out others constitute grades and types having close affinities with allied groups and that some types must of necessity overlap or blend with others, as indeed is found in practice to be the case; and, finally, it must be borne in mind that occasionally mixed types may occur—i.e., in which two or more mental morbid conditions may co-exist as combined morbid conditions exist in other parts or organs of the body.—*Lancet*, May 20, 1899.

CLINICAL RECORD.

Indian.

CASES OF PNEUMONIC PLAGUE.

By H. E. Deane, Major, R.A.M.C.

Case I. A Hindu boy, aged 13, was admitted January 20th, 1899. He had been inoculated three months previously and then had a bubo in the right groin. The evening before admission, having been well previously, he got fever with cough.

He complained of pain in the left side of his chest. Tongue coated white; P. 144, R. 48; vesicular breathing over right lung; dulness over lower half of left lung and faint breath sound in left axilla and at extreme base; and, above the line of faint breathing, there was marked tubular breathing both with inspiration and expiration. There was short hacking cough, no sputum, no bubo; mind quite clear. Bryonia 1x ♏v., every hour. At 5 p.m. he had one small pellet of sputum of a typical rusty character. First sound of heart fairly good.

He passed a fairly good night and next morning was fully conscious and took nourishment; P. 92, R. 52, when he suddenly died.

Case II. Mohammedan woman, aged 50, admitted January 28th, 1899. She had been found in the street, could not be made to answer questions and was in a state of muttering delirium, and unconscious. Pulse 128, rapid and thready; no buboes; some cough, but no lung symptoms; R. 44. Naja 3x, ♏x., hypodermically; 2.30 p.m., P. 100, R. 28; 3 p.m., repeat injection. She was delirious till late at night, then slept, waking (January 29th) free of delirium and looking better. T. 100.2°, P. 104, R. 30. Cough worse. About mid-day she was sitting up, with difficult and oppressed breathing. P. 120, R. 40. There was extreme tubular breathing over the lower half of left lung with inspiration and expiration. Phosphorus 1-250, ♏x., every half-hour. Nine p.m., T. 104.4°, P. 112, R. 56.

January 30. No sleep. T. 101.6°, P. 96, R. 42. One small pellet of rusty expectoration. Fine crepitation at lower part of axilla and at base posteriorly on left side. Breath sounds faint at upper part of left back. Phosphorus half-hourly till 10 p.m., then hourly through the night.

January 31st. T. 102.8°, P. 112, incompressible, R. 40. Slept fairly well, looks better. Tubular breathing to angle of scapula and round through the axilla in a line with the nipple downwards. Crepitation has disappeared. Tongue cleaner, but inclined to be dry. Phosphorus and Bry. 1x alternate hours. In the evening fine crepitation all over base; coughs more; no sputum.

February 1st. T. 100.6°, P. 100, R. 32. Area of tubular breathing diminishing, no crepitation. Breathing over left front faint. Five p.m., crepitation (? *redux*) over affected area. Antim. tart. gr. $\frac{1}{8}$ every two hours.

February 3rd. T. 99.4°, P. 108, R. 36. Air is entering upper part of base.

February 5th. Slept well; cough troublesome; tongue clean and moist. Fine friction sounds over affected area. Bryonia 1x and liquor arsen. alternate two hours.

February 6th. Hepar sulph. 2x, gr. iij., two hours.

February 11. General aspect better than since admission, voice stronger P. 92, R. 26.

From this time her convalescence was uninterrupted.

NOTE.—I had little hope of this woman's recovery when admitted. The naja seemed to have a good effect in reviving her, and I was able to get the pneumonic condition under treatment early. ' The entire absence of expectoration, except one small pellet, is notable, and has characterised the few plague pneumonic cases I have seen. It may be objected this was not a case of plague pneumonia, but there was no sputum to examine and the bacteriological examination of plague cases has been so eminently uncertain and unsatisfactory, that a negative result as regards the microbe would not in my mind invalidate a clinical diagnosis. I may mention that the objection which I have had submitted as to its not being a plague case, is that the case recovered. Such, *per se*, will hardly occur to any homœopath, and is not worthy of further remark.

CASE III. An uncle of Case I., assistant in the plague hospital, had been feeling seedy for two or three days, and suddenly got worse, with severe headache, rigor, fever and vomiting. He had been inoculated some weeks, and had no sign of plague, and I thought at first that it was a case of malaria. He had to lie up on January 10th, 1899.

A few doses of Gelsemium relieved the headache. He vomited on two or three occasions, and on 12th an irritating cough set in, with some viscid sputum, of mucoid character, but no physical signs were detected, except faint breathing at left back. That same evening his eyes were congested, tongue foul, and he complained of great thirst.

He became restless, pulse rapid and weak, and during the night well-marked pneumonic signs developed in left lung. He was put on phosp. 1-250 ♏x. every hour, and after first dose expectorated freely, a typical rusty sputum. He was sinking when the treatment was commenced, and died at mid-day on 13th inst.

Case I., his nephew, had attended him in hospital, and was directly infected, evidently, and the father and grandmother of Case I. also died on January 20th, but I did not see the cases. They had all attended on the hospital assistant.—*Monthly Homœopathic Review*, June 1, 1899.

Foreign.

A CASE OF MITRAL INCOMPETENCE.

By Byres Moir, M.D.,

Physician to the London Homœopathic Hospital.

A. L., aged 26, female, admitted to the hospital June 5, 1896. Discharged August 1, 1896.

History.—Had rheumatic fever at the age of 12 and a second attack when 20. Was married at 21, when she was apparently in good health, but at the birth of her only boy two years afterwards became very weak and has not been well since. Suffers from palpitation and dyspnœa, with swelling of the feet and legs. During the last few days the abdomen has begun to swell, and her general state was so much worse that she sought admission to the hospital.

Condition on admission.—Was suffering from marked dyspnœa. Mucous membranes were pale. Conjunctivæ tinged yellow. Complains of severe pain in left side of chest and behind shoulder blade, there is also palpitation and orthopnœa on the slightest exertion. Pulse rapid; very irregular both in time and force. The præcordia is distinctly bulged. Apex beat is felt as low down as the eighth left interspace and as far out as the mid-axillary line. The whole præcordia is seen to heave with the pulsations, and there is also pulsation in the epigastrium and vessels of the neck. Auscultation reveals a blowing systolic murmur in the mitral area well conducted round to axilla and the angle of the left scapula. It is less marked towards the tricuspid area. No murmurs at the base. The heart's action is very rapid and irregular.

Respiratory system.—There is dulness on percussion on both bases posteriorly with diminished breath sound, and vocal resonance is also diminished. Moist crepitus can be heard at the right base. *Alimentary system.*—Appetite is very bad and patient suffers from constant vomiting. *Abdomen.*—There is marked abdominal distension (measurement 39½ inches) with prominence of the umbilicus. The walls of the abdomen pit on deep pressure. Dulness to percussion in both flanks, which shifts in position on lateral decubitus. Well-marked fluctuation thrill. The edge of the liver can be felt about two inches from the umbilicus; it is tender to pressure but quite smooth. There is general anasarca of the loins, abdomen and lower extremities. *Urine* scanty in quantity; copious deposit of urates with trace of albumen.

Infusion of apocynum ℥ i. every three hours was ordered.

The urine passed in the first twenty-four hours was 10 ounces, the next day 24, then 32. It fell again to 8 ounces, and infusion of digitalis ℥ i, every three hours was ordered. With this it rose again to 32 ounces, but fell again to 14 ounces. So on June 15 strophanthus ♏ v. was given, and under this steady improvement took place. The quantity passed rose to 70 ounces and the dropsy passed gradually away, and she was able to leave the hospital with compensation well established.

The tracings showed improvement in the pulse, and the abdomen, which on admission measured 39¼ inches, was reduced to 29½ inches. —*The Journal of the British Homœopathic Society,* April 1899.

CASES OF MITRAL INSUFFICIENCY.

BY PROF. J. PETTEE COBB.

CASE I. January 23, 1899. Sam Cklickman, age five and one-half years. There are in the family five other children, all well. This boy had measles when two years old; scarlet fever three months ago; since then he has not been well. He has pains in the cardiac region, which are worse at night.

About two weeks ago he began complaining of pain in his hands and feet. He cannot extend his fingers. His feet pain him when he walks and also at night.

He has had epistaxis for six weeks—lasting until three weeks ago.

He sleeps fairly well except when his feet hurt him. His appetite has not been good since his illness. Bowels move every day. Stool varying from light to dark. At times the urine is high colored.

Physical examination. Pulse 120, rather tense; temperature 100°.

Soft systolic murmur at the apex; mitral insufficiency, compensation good. No swelling of the joints. Colchicum 2x every two hours.

February 3. Cardiac pains seem slightly better. Still has cramps in hands and feet which keep him awake at night. Colchicum 3x q. i. d.

February 10. He was placed in the hospital to ensure favorable surroundings and in order that we might enforce a large amount of rest.

This boy has continued to make good improvement while in the hospital, and now appears like a well child and is fairly well nourished. After he had been in the hospital a week, occasional attacks of epistaxis recurred, and for a time his remedy was changed to ferrum phosphoricum.

If you will listen carefully at the apex you can still distinguish a soft systolic murmur. The points of interest in this case are that he has not been well since his attack of scarlatina three months before his admission; that he first complained of pain in the cardiac region; that after this pain had been noticed for five or six weeks he began to have attacks of epistaxis, and that not until four weeks later did he show any articular symptoms. The articular symptoms are confined to the feet and hands, occur during extension, and are probably due to increased tension of the tendons.

This was unquestionably a case of acute rheumatism where the first and most constant symptom has been the endocarditis; he does not any longer complain of the cardiac pain or the pain in his feet and hands; he sleeps well and has a good color, but the slight murmur remains to tell the story. He will be likely to have repeated attacks, as he is bound to suffer exposures, to be improperly clad and to be fed upon an improper diet.

Under the most favorable conditions this murmur would probably disappear, the liability to recurrence would be outgrown, and he would become physically developed for any kind of work. Few of our clinic children can, however, count upon being placed in the most favorable conditions.

CASE II. January 16, 1899. Merle Farley, age seven years; family history good. Had scarlet fever when five years old; whooping cough at six years. Has had rheumatism in his legs for some time. In November was ill; was confined to bed for two weeks; had stomach trouble; since then has manifested some nervous symptoms, especially in not having the free use of his right arm and leg. For a long time he has had a slight cough, which is worse now on account of a cold he contracted two weeks ago. He frequently has fever at noon and night; has been losing weight for some months. He is a poor sleeper, grinds his teeth and talks. Breath is foul in the morning; bowels regular.

Physical examination. Mitral insufficiency with some hypertrophy; systolic murmur at the apex very marked; small tense pulse; cog-wheel respiration; chest expansion markedly diminished; temperature normal; tonsils enlarged.

℞. Nutritious diet; regular exercises; Trommer's hypophosphites of lime and soda in cod liver oil; naja 6x q. i. d.

January 23. Is much better. Sleep and appetite improved; coughs no more at night only after going out of doors. Remedy continued.

February 6. Continues to improve in every way. Remedy continued.

February 20. No trouble now with right arm and leg. Temperature, 99-2/10°. Remedy continued, also fe. phos. 3x q. i. d.

March 6. Continued improvement; has *no* cough. Remedy continued.

There is nothing in this history which will elucidate the proper sequence in the development of his symptoms; the rheumatic pains in the legs are not known to have preceded the cardiac symptoms, and in all probability are a subsequent development. The fact that the cough has been an annoying symptom for a long time would point us back at least one year to the attack of whooping cough. There is no evidence of dilatation, and we hardly have the right to ascribe the cough to any pulmonary œdema. Under our treatment, however, the cough was one of the early symptoms to disappear.

You will find that enlarged tonsils, adenoid growths and a history of frequent attacks of tonsilitis will be associated with many cases of rheumatism, and like endocarditis are sometimes the earlier symptoms of rheumatic condition.

The impairment of the functions of the right arm and leg is possibly of hemiplegic origin; the lack of any description of a sudden occurrence rather suggests that the impairment was of rheumatic origin; their prompt disappearance also confirms this explanation.

This boy can also expect further improvement: his response to improved diet, better care and our remedies is very satisfactory, and demonstrates that these little sufferers are not all doomed to a progressive cardiac lesion.—*The Clinique,* April 15, 1899.

Gleanings from Contemporary Literature.

SHAKESPEARE AND THE MEDICAL SOCIETY.

Being the Annual Oration delivered before the Medical Society of London.

By Alban Doran, F.R.C.S.,

President of the Obstetrical Society of London; Surgeon to the Samaritan Free Hospital.

Mr. President and Gentlemen,—"Present fears are less than horrible imaginings," so that I feel a sense of relief now that I am really about to deliver this Oration. When the Council informed me last summer that I was selected Orator I felt "most admir'd disorder," like Macbeth's guests. I held then, as I still hold, the office of an Ariel to the Society, being "correspondent to command" to foreign parts, and I had just heard curses both loud and deep follow my proposal that the indexing of our valuable *Transactions*, which I have for long maintained to be desirable, should be undertaken—but by somebody else. "Something too much of this," however, as Hamlet said to Horatio. I was selected. I thank the President, Council, and society for the honor which they have conferred upon me, and, like those humble people, the players in *A Midsummer Night's Dream*, my "true intent is all for your delight."

The choice of a subject rendered me "perplex'd in the extreme," like Othello. Still it is right that I should dwell upon it. "Little shall I grace my cause in speaking for myself," but, as Ulysses says in *Troilus and Cressida*, "One touch of Nature makes the whole world kin." Most of you have had or will have to choose a theme for an address. At first I thought of Medicine a Noble Profession, but, like Troilus, "I cannot fight upon this argument, it is too starv'd a subject for my sword." Lectures on this lofty theme are usually "full of wise saws and modern instances." I will follow Richard the Third's advice to Queen Elizabeth of York when she alluded to the asphyxiating of the princes in the Tower and harp not on that string. As to questions where I might speak after some experience, they set me thinking of statistics of abdominal operations, till I felt, like Lewis in *King John*, that to you they would be "as tedious as a twice-told tale vexing the dull ear of a drowsy man." Some of you may say, like Francisco in *Hamlet*, "For this relief much thanks." I soon put aside all thoughts of deciduoma maliguum as my subject; had I selected it you would have found me "tedious," like Polonius, Dogberry, and Verges.

At length I bethought me of the Bard of Avon. His observations upon human nature can be fitted to anything human in any age, collectively or individually. So I decided to apply his wisdom to the ways and doings of our Society and profession. It happens, as you all know, that our President opened this hundred-and-twenty-sixth session with some instructive remarks on a precious MS. work in our library, the diary of a Vicar of Stratford-on-Avon,[1] who lived there not long after Shakespeare's death and recorded certain facts and traditions about the Bard. Allow me, then, to conclude the session with a little more about him. I expressed my intent to our President, as the conspirators communicated their plot to Brutus, for "that which would appear offence in us, his countenance, like richest alchemy, will change to virtue and to worthiness." Our President, like the King in *Hamlet*, wished last autumn[a] to know something about the "argument" lest there should be any "offence in't." I replied that I had not even begun the "argument," but that there would be "no offence i'the world," and thus I won his approval.

In awarding due praise to Dr. Bucknill, Dr. John Moyes, of Largs, and others who have written systematic works on Shakespeare and medicine, I must add that their method is not suited for the present oration, nor need I discuss their subject in a general sense, as has been done by Mr. Lemuel Griffiths, of Clifton, in an excellent address published in the fifth volume of the *Bristol Medico-Chirurgical Journal.* Nor, on the other hand, need I weary you with a string of Shakespearian samples laboriously extracted from Bartlett's *Familiar Quotations*, or from Cowden Clarke's *Concordance*, or from some so-called "beauties" of Shakespeare. Let us see how far the poet's thoughts suit our case.

This Society, as a society, encourages us to speak, and conference, says Bacon, maketh a ready man. We are more or less obliged to talk about what we understand, and the circumstances of a meeting are not such as make men timid. Hence in our discussions we see none of that painful nervousness shown by the student at an oral examination or by the dinner guest unexpectedly called on to reply to a toast. The victim feels like banished Norfolk in *Richard the Second:*

And now my tongue's use is to me no more
Than an unstringed viol or a harp,
Or like a cunning instrument cas'd up,
Or, being open, put into his hands
That knows no touch to tune the harmony,
Within my mouth you have engaol'd my tongue,
Doubly portcullis'd with my teeth and lips.

On the contrary, in a Society like ours, though high oratory is perhaps not conspicuous, many of us speak trippingly on the tongue, and few, if any of us, saw the air with our hands, but we use all gently. In discussion we appear to acquire and beget a temperance that may give it smoothness. Let us trust that we rarely, if ever, speak more than is set down for us by the limits of our subject, a defect less to be excused than "gagging," its homologue on the stage, which Hamlet, whose language I am borrowing, condemns as villainous, showing a most pitiful ambition in the fool that uses it; nor, as the Duke in *Measure for Measure* would say, do we think the man of safe discretion that does affect it.

Let us consider ourselves first as doctors, for of such are the Fellows of this Society. Shakespeare puts us forward both as authorities and bread-winners. There are unqualified practitioners in his plays; thus Richard II, when trying to reduce Bolingbroke and Norfolk's mental temperature, says, "this we prescribe though no physician." The black sheep, the Calibans of our profession, are not of our fold; we leave the Prosperos of the Colleges and the General Medical Council to deal with them. We encourage these worshipful authorities, as the host of the Garter encouraged Falstaff about his followers: "discard, bully Hercules; cashier: let them wag; trot, trot." Of a certain odious professional crime, we may say, as Stephano says of a misdeed of Caliban's, "There is not only disgrace and dishonour in that......but an infinite loss."

The doctor in Shakespeare's plays is placed favourably before the audience. Jokes at the expense of medical men teem in French and English comedies of a later age. Molière was right in condemning the medical education of his time, and in reminding us that patients want to be cured.[2] Thirst for fees is never made an attribute of the doctor in Shakespeare's plays. Macbeth's physician alludes to profit, but in respect to a shady patient, and when fearing personal danger. "Were I from Dunsinane away and clear, profit again should hardly draw me here." In the generation after Shakespeare, according to the researches of the late Dr. Creswell Rich of Liverpool, there were those who considered that whilst, of course, we must practise, we are no longer "doctors" when we cure for money. A medical bard of the days of the Commonwealth embodied this idea in a clever rhyme:[3]

Doctors or *Teachers* they of *Physick* are
(Whether by Pen they do it or in Chair
With lively Voyce), that teach the way to know
Man's Nature, Health and *Sickness,* and do show
Diseases, Cause and *Cure.* But they who spend
Their life in *Visits* and whose Labors end
In taking *Fees* and giving Paper-scrowls
FACTORS of Physick are; and none but *Owls*
Do count such *Doctors* that *no Latin know*
From which that Name did to our Language flow.

This epigram appears at the end of the preface in a copy of Riverius's *Practice of Physick*, and is signed "W. R. Doctor, and Factor of Physick, from my study at Montpelier, July 1st, 1653." Most of us in these days are like this forgotten Dr. W. R. and the distinction which he applies to himself is quite reasonable and inoffensive.

I cannot avoid dwelling awhile on the two noble doctors in *Macbeth* and *King Lear,* though many have already spoken of them in medical addresses. One delivers a speech among the most beautiful in the bard's plays, and that is saying a good deal.

For some reason Lear's medical attendant is styled a "physician," Macbeth's "a doctor of physic." Lear's is made the more successful of the two. Of course there is no question of history in *King Lear*. In the days of British kings there was no such thing as a King of France, and absolutely no political homologue to a Duke of Burgundy. Nor did Shakespeare create this physician to typify the medicine man of ancient Celtic Europe. Such a task was beyond his knowledge and power even if suited for dramatic treatment. Shakespeare clearly makes Lear's physician like to a doctor of his own times. It seems to me that the reason why Lear's doctor is made better than Macbeth's is purely dramatic and not a direct way, independent of the plot, demonstrating that one doctor of repute may be more skilled than another in closing the eye of anguish and ministering to a mind diseased. Shakespeare felt that want to see the deeply-wronged Lear kindly treated, whilst dramatic morality demands that Macbeth's doctor should remind the usurper that our profession cannot cure guilty consciences.

Cordelia consults the physician about her sire's delirium :

> What can man's wisdom
> In the restoring his bereaved sense ?
> He that helps him take all my outward worth.

She did not run her court physician on club principles. He was worthy of his hire in her generous opinion. His reply is a fine speech :

> There is means Madam :
> Our foster-nurse of Nature is repose,
> The which he lacks ; that to provoke in him,
> Are many simples operative, whose power
> Will close the eye of anguish.

Like one of our past Presidents, Mr. Knowsley Thornton, he believed in narcotics in treatment. Though medicinal herbs were called "simples," the mixtures made up from them were highly complicated. Still less can we apply such a term to the narcotics and hypnotics of to-day. I have closed the eye of anguish with diethyl-sulfone-methy-ethyl-methane, and find it sometimes superior to dimethyl-methane-diethyl-sulphone. Trional and sulphonal certainly sound better. A more serious matter in respect to the very unsimple nature of modern chemical compounds is that multiplicity of synonyms just indicated. We hear of inquiries as to trying the effects of a little analgesine or even some phenazone on a patient who cannot tolerate antipyrin.

Lear's physician gets his patient to sleep. Afterwards, he wakes the King so that the old man may see that his beloved, misunderstood daughter is tending him. The doctor prescribes music, perferring it apparently to brandy and milk, or a new patent food. Anyhow, the rest has restored Lear's faculties. "I am a very foolish fond old man, four score and upward, not an hour more nor less," says the King. The doctor has succeeded.

Macbeth's medical adviser has a patient who has incited her husband to murder his guest. She is supposed to be sinking, just like "the grand conspirator, Abbot of Westminister" in *Richard the Second*, from "clog of conscience and sour melancholy." The doctor deliberately tells Macbeth that his wife is "not so sick......as she is troubled with thick...coming fancies, that keep her from her rest." The usurper replies, "Cure her of that," and makes a well-known speech. Several purely medical critics consider that the doctor is meant to show want of tact when he says "Therein the patient must minister to himself." I believe, however, that a purely dramatic and moral idea runs through this consultation. There must be no help for the wicked—nothing but care, ruin, and death for the guilty couple. Just as the doctor, among other characters, must comfort Lear, who deserved to be comforted, so he must fail to comfort Macbeth and his wife, who had forfeited the sympathies of humanity. From our point of view no doubt the doctor was unwise in saying that "therein the patient must minister to himself." Such a remark offends people, and it is natural that Macbeth should reply, "Throw physic to the dogs!" We know how a patient ministers to himself; in respect to so material an act as making his own poultice. But I believe that this was not Shakespeare's idea. He meant that the doctor, like the usurper's officers and men, could not ward off the pangs of conscience and the coming ruin of the King and Queen. The apparently tactless remark was meant to be conscience speaking through the doctor's mouth, and conscience is not supposed to possess the tact of a Court physician.

Later remarks of Macbeth to his physician simply imply desperation. If he could cure Scotland by physic, the usurper would applaud him to the very echo that should applaud again. But Macbeth was not criticising physic; he knew that his country could only be cured by being purged of himself, its real disease.

Let us mark that Timon of Athens, another desperate man abuses doctors when he says to the thieves:

> Yet thanks I must you con,
> That you are thieves profess'd that you work not
> In holier shapes: for there is boundless theft
> ...... Trust not the physician;
> His antidotes are poison, and he says
> More than you rob.

No reader of Shakespeare thinks that our profession is here attacked. The passage is meant to show the blindness of judgment bred by disappointment. The use of the doctor for dramatic purposes is evident here and nearly, though not quite, as evident in *Macbeth*. In neither is there any satire directed against medicine.

There is also an English doctor in *Macbeth*. In a passage which always puts me in mind of our clinical evenings he relates to the Scottish exiles how Edward the Confessor cures the "king evil:"

There are a crew of wretched souls
That stay his cure : their malady convinces
The great assay of art ; but at his touch
Such sanctity has heaven given his hand,
They presently amend.

Prince Malcolm adds :

...... Strangely-visited people.
All swoln and ulcerous, pitiful to the eye,
The mere despair of surgery, he cures.

Here the Bard is really glorifying Edward the Confessor, the last Englishman by family who ever sat on the throne. Then follows a remark which simply means that the rulers of England in Shakespeare's time clearly had sanction from Heaven as well as from earth :

...... Tis spoken,
To the succeeding royalty he leaves
The healing benediction.

The doctor is made a prophet to play up to the loyalty of an audience already loyal to "Eliza and our James," and to make those sovereigns figure as Heaven-sent successors to national hero whose memory was deeply revered.

Shakespeare never meant to hold up this English doctor to ridicule because he admitted that scrofula was the mere (complete) despair of surgery. It remained so till very recent days, and some of its forms still "convince the great assay of art." Cancer and certain other diseases still defy us. Let us study them all the more earnestly. Like the watchman in *Romeo and Juliet*, "we see the ground whereon these woes do lie ; but the true ground of all these piteous woes we cannot without circumstance descry." We much watch hard cases, and the Medical Society does so. Strangely visited people ......pitiful to the eye," are what we collect for our clinical evenings. Our aim is that they should be no longer pitiful to the eye, and that their visitation should not remain strange, but be made easy to understand and overcome. Do we succeed ? We can say, Yes ! Let us look at the records of the Society twenty years ago. Cases were written about which nobody would bring forward now, for we all understand much more about them. Sufficient information is to be found in our textbooks.

Cornelius, the physician in *Cymbeline*, is placed in an entirely favourable light. But just as the Bard did not create the two doctors in *Macbeth* in order to satirise medicine, so he did not mean Cornelius to glorify our profession. The character is part of the dramatic machinery devised to protect Imogen against her enemies. Dr. Butts, an historical personage, is not represented in his professional capacity in *Henry VIII*. Dr. Caius is held up to ridicule, but as a comic foreigner, an elderly wooer, not as a doctor.

In *All's Well that Ends Well* the court physicians fail to cure the King of

France's thoracic fistula, but the plot turns on the success of the heroine who uses a remedy introduced by a deceased doctor—her own father. It would be interesting to know how the fistula was closed. Helen's "receipt" seemed, according to Boccacio, to be purely herbal (*polvere di certe erbe utile a quella infermita*),[4] so that there was no drainage, still less excision of a rib. In the original story[5] we are distinctly told that the fistula (*fistola*) was thoracic (*ne petto*).

Shakespeare's attitude to surgery now claims our attention. The surgeon held a very low social position in the sixteenth century. He is sent for in *Romeo and Juliet* and in *Othello*. In *Twelfth Night* Sir Toby Belch says: "Sot, did'st see Dick surgeon, sot? Nowhere is the surgeon exalted, yet there are numerous allusions to surgery, and much of the general wisdom in Shakespeare's plays especially applies to surgery. Often is the surgeon like the captive Richard II, a sworn brother to grim necessity. We must be prompt when surgical interference is clearly indicated. "Our doubts are traitors, and make us lose the good we oft might win by fearing to attempt," as Luico says in *Measure for Measure*. "Present" or immediate surgical assistance must often be administered, like "Prsent medicine" in King John's case, "or overthrow incurable ensues." Like Richard III, we have heard that "fearful (that is, timid) commenting is laden servitor to dull delay," which is dangerous when we have hæmorrhage or strangulated hernia to deal with. On the other hand, the surgeon must not trust too much in novelties. They soon come to his hearing, as in the case of Richard II; for York asks John of Gaunt: "Where doth the world thrust forth a vanity (so it be new, there's no respect how vile) that is not quickly buzz'd into his ears?" Too many novelties prove to be devoid of the merit of originality. What seems new is too often assumed to be new without scrutiny, so deeply does any apparent innovation fascinate us. "All, with one consent," says Ulysses, "praise new born gawds, though they are made and moulded of things past."

We must not forget that the fame of a surgeon may sanction a novelty on insufficient grounds. An able operator is naturally admired. His followers imitate him in the operating theatre, where he is probably their superior. They usually go a step further and support his practical work on the ground of scientific theories which have never entered his head. He is in the postition of Antonio and Sebastian in the *Tempest*, when they say, in respect to their conspiracy:

> For all the rest,
> They'll take suggestion as a cat laps milk,
> They'll tell the clock to any business that
> We say befits the hour.

Hence, when the "business" is the drying of the peritoneum with sponges, his disciples find that sponging is the best means of avoiding sepsis. When the drainage tube is said by the great operator to "befit the hour," forthwith that appliance is found, on scientific evidence, to be an absolute necessity as a guard against deadly germs. Then comes a gentleman who practises flushing of the peritoneum with saline solution. At once experimenters demonstrate that the drainage tube is a dangerous conveyor of sepsis, and that it is the bounden duty of every surgeon to reject it and adopt the new practice. Those who will not take suggestion as a cat laps milk are "but as the cuckoo is in June, heard, not regarded," as Henry IV said when he scolded his son.

A surgical Ulysses is justified in being shy about enthusiasm for new operations, especially when he knows that the knife can be dispensed with. He rightly condemns those who "tax our policy and call it cowardice; count wisdom as no member of the war; forestall prescience and esteem no act but that of hand." Novel operative measures as reported too often lack after-histories. "Striving to better, oft we mar what's well," says Albany; and when his wife protests, he adds, "Well well, the event!" In Goneril's case "the event" or after-history was disastrous, but Shakespeare did not omit to include it in his report.

In the recognised fields of operative surgery, however, we cannot have too much courage, experience, and practice. Surgical cowardice is far worse than over-zeal for surgical innovations. While we must not let our surgical instincts induce our reason to argue in favour of operating when we are not sure that the case may not do without it, we at the same time must never allow timidity to urge us to refrain from the knife when we know that it offers the patient the best chance of recovery. We must be specially brave and conscientious in this respect when the case is specially dangerous, otherwise a fatal termination, should we decline to operate, may be a greater opprobrium than death following an operation which we know to be our duty. As Greig Smith most righteously taught, we must try to save other people's lives even if we ruin our own statistics, otherwise those statistics will come under Touchstone's "lie circumstantial." "Of all the wonders that I yet have heard, it seems to me most strange that men should fear," said Cæsar. This certainly should apply to operating. Custom will make it in us a property of easiness, till we become less and less like the gravedigger in *Hamlet*, to whom Horatio applied this expression.

These observations on surgery refer to the surgeon in abstract. They demonstrate sources of error ineradicable from human nature. There can be no individual surgeon of experience who has never placed in a new operation or in the teaching of others confidence which has proved to be ill-founded, and who has never wished that an operation which he has been obliged to perform under desperate circumstances had not fallen to his lot. "Who calls out on pride that can therein tax any private party?" says Jacques. As with satires on pride, so it is with criticism on the inherent weaknesses of man as a surgeon. Such criticism "taxes," that is to say condemns, no "private party," no individual surgeon. It concerns us all, and so we must never cease to strive alike against the abuse of our zeal and the promptings of our fear.

Let us turn now to our library. Prospero said, "My library was dukedom large enough," and certainly Dr. Allchin, our retiring Librarian, has ruled his duchy well. Like Shakespeare we do not rely too much on books. Iago complains that Cassio only knows the bookish theoric, mere prattle without practice. Biron, in *Love's Labour's Lost*, carefully distinguishes between study and books :

Study is like the heaven's glorious sun,
That will not be deep search'd with saucy looks ;
Small have continual plodders ever won,
Save base authority from others' books.

We certainly all agree with Biron. Compared with personal observation—

Other slow arts entirely keep the brain ;
And therefore, finding barren practisers,
Scarce show a harvest of their heavy toil.

We go further than Biron meant, we study men as well as women. Our fellow-creatures are the books, the arts, the *academes* that show, contain, and nourish all the world. We also investigate morbid structures and *post-mortem* appearances. As Northumberland says on hearing the rumour of Bolingbroke's return, "Even through the hollow eyes of death I spy life peering," an expression which recalls to our minds "*nec silet mors*," the beautiful motto of a sister society, the Pathological. Books are a means, not an end. Yet means are wanted and we have a fine stock. A good clinical report is like a good picture, "it tutors Nature ; artificial strife lives in these touches, livelier than life," as the poet in *Timon of Athens* remarks. A certain amount of experience renders authorship almost a duty. "The fire i' the flint shows not till it be struck," and the experience of an earnest worker may never show beyond the limits of his practice or his hospital till it is committed to paper.

This duty of making public all useful medical knowledge leads us to think of the most prominent features of our Society, our papers, and our discussions. We all feel as Ulysses did when he upbraided Achilles for not coming to the meetings of the Grecian heroes, where the discussions, we must admit, were of more general interest than ours :

No man is the lord of anything
(Though in and of him there be much consisting)
Till he communicate his parts to others ;
Nor doth he of himself know them for aught
Till he behold them form'd in the applause
Where they're extended.

Most assuredly no man can feel that his knowledge and experience are of any definite value for the relief of disease or for the advancement of science until he communicates them to others, as he can do at our meetings, and sees what reception or "applause" is accorded to them here where they are made public or "extended." Good papers are based on observation and experience, "set in a notebook, learn'd and conn'd by rote," like Cassius's faults or a neurotic patient's account of his own symptoms. As Antonio says in *The Two Gentlemen of Verona* (one of whom was not a gentleman), "Experience is by industry achieved and perfected by the swift course of time." Once that experience is gained, the writing of a paper becomes easy, for we write best about what we know best, and therefore like best. "No profit grows where is no pleasure ta'en," says Tranio in *The Taming of the Shrew*, and "to business that we love we rise betime and go to't with delight," like Mark Antony. The great advantage of a society like ours is, as, I have already observed, that it obliges us to confine our observations to matters about which we have some knowledge and experience. Never, I trust, do we forget that we should all listen a great deal more than we speak and write, so that we may profit by the collective knowledge and experience of the multitude of consellors in the Society. Like Gloster, our younger colleagues must not be easily won to our requests for papers. Nevertheless they too should communicate their parts to others after they have learnt here how to do it. Parolles in *All's Well that Ends Well* says to Helena when she defends spinsterhood, that to speak on the part of single life "is to accuse your mothers, which is most infallible disobedience." On the same principle, for our junior brethern to speak in favour of abstention from papers, and to defer indefinitely their maiden speeches is to accuse their elders, which we cannot but think "most infallible disobedience." Of a junior amongst us we may say, as was said of Proteus's proposed travels, that it "would be great impeachment to his age in having"—read no papers—"in his youth."

Good paper cannot always be free from justifiable criticism, which none the less may offend those of an opposite opinion. Yet Goneril spoke truth when she said, "All's not offence that indiscretion finds and dotage terms so." We all, even if still young, tend to dote on our own conclusions and theories, and never like to find them supplanted, but they must in their turn give way to others, just as they once supplanted earlier teaching. Even an apologetic sentence to this effect, in a new paper, only irritates us, just as the King deeply offended Hamlet by reminding him that if he had lost his father, "that father lost, lost his." As Mephistopheles says to the medical students in Goethe's *Faust:*

> Grau, theurer Freund, ist alle Theorie
> Und grun des Lebens goldner Baum.

In truth every theory is born old and grey, and life is ever young and green. Let us not think that our own theories are immortal, but let us rather imitate the modesty of Dr. Samuel West, who concluded his third Lettsomian Lecture with the following words: "On a subject so full of difficult and contentious questions I cannot expect that my views will commend themselves to all. Yet defined opinions challenge criticism, and criticism tends to advance knowledge."[6] We all know well Dr. West, like

Buckingham, left nothing fitting for his purpose untouched or slightly handled in debate.

In reference to another, our *Transactions* show that we always "speak brotherly of him," not in the spirit of Oliver who wanted his brother Orland's neck to be broken. The truth we speak never seems to lack gentleness, nor time to speak it in; in short, we are more polite than my Lord Sebastian. Nevertheless, we may elude away a friend by opening his eyes to an error, just as Prince Arthur elud away a friend when, on the contrary, his eyes were in danger of being put out.

Closely associated, both in a literary and a scientific sense, with the preparation of papers is the question how far we can rely on foreign authorities. We can understand our own teachers, and we know how much weight can be attached to the opinion of a living British authority as we can easily become acquainted with the man, we can judge of him by his appointments, and he communicates his ideas in our own tongue. The same is not the case with the author of a foreign monograph or clinical sketch, the value of which it is important to estimate before we quote it. Foreign opinions should never be taken from a translation in abstract. We must translate the original, or induce a friend who knows the language to translate it for use. In short, owing to the excellent work done abroad "the tongues," as Shakespeare would say, are indispensable. Don Pedro, in *Much Ado About Nothing*, assures Beatrice that Benedick "hath the tongue," an accomplishment socially advantageous to a Renaissance gallant, but a necessity to us who write papers for the Society. Our last volume shows that we own our indebtedness to the foreigner. It is indeed meet that we should do so. The fellows of our Society are not in the habit of quoting without acknowledgment. Let us remember a significant scene in *The Two Gentlemen of Verona*. Valentine enters a forest "on the frontiers of mantua," where "certain outlaws" make him stand and deliver. He expresses a desire to join their band. One outlaw says, "Have you the tongues?" Valentine's reply being in the affirmative, another robber exclaims enthusiastically, "This fellow were a king for our wild faction." We know only too well that "certain outlaws" of literature, known as plagiarists, make free use of foreign authors without being too ready to acknowledge them. But I do not think that any Fellows of our Society belong to that "wild faction."

There is another advantage in a Society like the Medical. It teaches us command and management. We have a President and Council to govern us, for

> The heavens themselves, the planets and this centre,
> Observe degree, priority, and place,
> Insisture, course, proportion, season, form,
> Office and custom, in all line of order.

"What with our council we have done," as Richard II says, we all know.

Sometimes a specially distinguished gentleman obliges us by ascending our rostrum. This session was thus favoured by Sir William Broadbent.[7] We may assure him, as the Lords assured the King of France in *All's Well that Ends Well*, that "our hearts receive your warnings." But Gloster's heart in *King Lear* conducted itself ill in the face of difficulties.

> His flaw'd heart—
> Alack; took weak the conflict to support!—
> Twixt two extremes of passion—joy and grief
> Burst smilingly.

Yet Loison's recent statistics of wounds of the heart[8] show that in prose, if not in poetry, that organ stands a great deal, and will even allow needles to be thrust into it and then pulled out by the surgeon. Herein Fortune, as Antonio would say, shows herself more kind than is her custom.

In conclusion, if we ever feel momentary doubts about the real value of our Society, and if others ask what "good" is to be got out of papers and discussions, it must be remembered that such a sentiment is unwholesome and akin to the thought that all medical research and progress is an illusion. It is a sentiment pardonable in Macbeth and Timon of Athens when driven to desperation, but unworthy of sober-minded doctors. "Contempt," says Carlyle, "is a dangerous element to sport in; a deadly one if we habitually live in it." What though there seem but little in any one paper or discussion, what if even the method for healing the sick which it advocates should prove less satisfactory on further trial than its author expected? What if a weighty scientific monograph show but little, considering the time and labour spent on its preparation? The same objection applies to the clinical and surgical labour and to the microscopic and laboratory work which these productions faithfully register. The same objection has been raised in regard to all great efforts. As Agamemnon says:

> The ample proposition that hope makes
> In all designs begun on earth below
> Falls in the promised largeness......Why, then
> Do you with cheeks abash'd behold our works;
> And call them shames, which are, indeed, naught else
> But the protractive trials of great Jove
> To find persistive constancy in men?

"In the reproof of chance," adds Nestor, "lies the true proof of men." "Wise men," says Queen Margaret of Lancaster, "ne'er sit and wail their loss, but cheerily seek how to redress their harms." If a colleague can show us better results and demonstrate any scientific error we have made, let us thank him and cheerily seek the sources of the fallacies which have misled us. Then it shall go hard, as Shylock would say, but we will better the instruction.

After all, I am sure that it is seldom that we feel doubts about the value of our work. Papers and discussions make us articulate, as Carlyle would say, our yet more important researches so beneficial to science and humanity. Matters of detail may seem tedious, but "most matters point to rich ends," as Ferdinand in the *Tempest* was bound to admit We feel, when labouring for our liege lady Medicine, as he felt when working for his Miranda. For my own part, "the mistress which I serve quickens what's dead, and makes my labours pleasures."

We who make up the Medical Society are members of an essentially active profession, and while we remain in our prime let us do our best here actively. For age, like infancy, is mostly passive, or, as Edgar reminds us in *King Lear:*

> Men must endure
> Their going hence, even as their coming hither,
> Ripeness is all.

Notes and References.

[1] *Diary of the Rev. John Ward, A M, Vicar of Stratford-on-Avon,* extending from 1648 to 1679. The Society's Library possesses a copy of the same, printed and published by Colburn of Great Marlborough Street in 1839 (long out of print). Mr. Sidney Lee's valuable work, just published, throws much light on Shakespeare's later associations with Stratford. [2] "Ce qu'il y a de fâcheux auprès des grands, c'est que, quand ils viennent à être malades, ils veulent absolment que leurs médecins les guérissent" *Le Malade Imaginaire,* Act ii, Scene 6. [3] British Medical Journal, vol ii, 1883, p. 1103. Arthur Creswell Rich, M B Lond, died in May, 1888, and an obituary notice will be found in the Journal, vol i, 1888, p. 1091. I do not know what has become of the copy of Riverius's book which contains this remarkable epigram. I suspect that Dr Rich modified the spelling, which (except "voyce" for "voice") seems too modern for 1653. Dr. Rich was for several years special Liverpool correspondent to the Journal. [4] Boccaccio, *Decameron,* giorn. iii, Nov 9, Martinell's edition, 1762. [5] Boccaccio. *loc. cit* Bucknill, in *The Medical Knowledge of Shakespeare,* quotes the passage, which shows that the Italian author spoke of a thoracic fistula. Dr. Moyes (*Medicine and Kindred Arts in the Plays of Shakespeare*) traces Shakespeare's version to an intermediate tale Painter, where it is distinctly stated that "the French king had a swelling *on his breast,* which by reason of ill-cure was grown to be a *fistula.*" I have added above Boccaccio's specification that the receipt was a powder of certain herbs. From what I can make out, the King was probably the Dauphin Charles, who was a youth of 16 in 1353 when the *Decameron* was published. When a child he had a long illness and an abscess discharged under his [illegible]. I find that his chronicler, Christine de Pisan, states that Charles remained sickly and subject to feverish attacks all his life. All sorts of [illegible] were tried, it appears. In 1380, when he was Charles V of France, the fistula ceased to discharge and he died within a fortnight. Boc-

accio may refer to an earlier case, but there was probably much talk when he wrote the story about the Dauphin's illness, so that he chose thoracic fistula as the particular disease which Helena managed to cure. [6] BRITISH MEDICAL JOURNAL, March 11th, 1899, p. 583. [7] "The Conduct of the Heart in the Face of Difficulties," BRITISH MEDICAL JOURNAL, January 14th, 1899, p. 85. [8] "Des Blessures du Péricarde et du Cœur." *Revue de Chirurgie*, January 10th and February 10th, 1899.—*Brit. Med. Jour.*, May 20, 1899.

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SLEEP AND SLEEP-PRODUCING REMEDIES.

II.

(Continued from p. 232 *of last number).*

If the retina, as an outwork of the brain, does mirror the condition of this organ as regards its blood-circulation, then we have evidence of its *arterial* anæmia during sleep from the ophthalmoscopic observations of Dr. Hughlings Jackson. These observations were to the effect that during sleep the optic disc was paler, its arteries were smaller, its veins larger, and the neighbouring parts of the retina more anæmic than in the waking state. Galvanization of the cervical sympathetic was found by Hammond to be followed by somnolence, and also by a similar condition of the retinal vessels to that observed by Hughlings Jackson. So that it is legitimate to infer the condition of the cerebral circulation from that of the retina Hence from direct observation, as well as from inference from observations of the retina, we may consider it as established that there is less blood in the arteries of the brain during the sleeping than during the waking state.

The anæmia of the brain, so far as observed, being admitted as a constant concomitant, and also an antecedent, of sleep, the question arises whether it should be looked upon as the cause or only as one of the causes of sleep, or whether it is only an antecedent and accompaniment and not a cause at all. Now, in order to solve this question we must understand its full signification. The brain is a large organ, composed of various parts, roughly speaking, of the cortex, of the white substance proceeding from the cortex and occupying its middle, and of the ganglia at the base. When we speak of anæmia of the brain, do we mean anæmia of the whole brain or of some of its parts? It must be remembered that direct observation of cerebral anæmia has been confined to the surface or cortex. No observation has been or could be made of the central or the basal parts The condition of circulation of these latter could only be inferred from the state of the general circulation, or of the circulation of other parts than the brain.

Durham, besides actually observing the state of the circulation of the *cortex* of the brain, made other experiments which led to a similar conclusion as regards the whole brain. Thus he tied the jugular veins, and the results of venous stasis thus produced were quite different from the phenomena of sleep proper But when he ligatured the carotid arteries he produced an artificial anæmia of the brain and this was coincident with a condition which was similar to natural sleep. Five years before Durham, in 1855, Fleming had tried the experiment of compressing the carotids on himself and some of his friends and the result in thirty seconds when the pulsation had entirely disappeared, was "a soft humming in the ears, a sense of tingling stealing over the whole body, and supervension of complete unconsciousness," which continued so long as the pressure was maintained. Leonard Corning, of New York, in 1882, compressed the carotids of a man suffering from acute mania of a violent and protracted character, with the result that "the man's cries and struggles ceased in a few moments, and he was led to bed, where he at once fell into a peaceful sleep." The depression of the fontenelle and the smallness of its pulse-wave, of infants during sleep, furnish another good proof of the condition of the circulation of the whole brain in that state.

Dr. Leonard Hill's more accurate recent experiments with a sphygmometer of his own device, have confirmed the fact of the fall of arterial pressure during sleep. And though "at first sight, it would appear," says he, "that such result is confirmatory of the view that sleep is occasioned by cerebral anæmia, on further examination it becomes evident that the fall of the arterial pressure is concomitant with sleep rather than that it is the cause of sleep. From personal observations made from hour to hour throughout the day it has become clear that the fall of arterial pressure is invariably associated with warmth and rest in the horizontal posture. Even in the sitting posture such a fall may occur given the conditions of rest and warmth. Moreover when lying awake in the morning the fall of pressure is as great as when lying sleepy at night, that is to say, so long as the subject remains quiet and in the recumbent posture." "This being so it is not possible to ascribe the causation of sleep directly to the fall of pressure."

All this is admitted, and still the fact remains that the fall of arterial pressure, without being a direct cause, is an essential concomitant of the sleeping state. Natural sleep has not been observed to take place when this condition is wanting, and it is induced where this condition is brought about. Now what is the proper interpretation of this fall of arterial pressure as regards the actual state of the circulation in the brain? It can only mean slow flow of blood through its arteries and capillaries and necessarily slow flow through the veins too. Is the volume of the circulating fluid less in the sleeping than in the waking state? Direct observations, so far as they go, seem to point in this direction. But these direct observations were made under conditions in which the pressure of the atmosphere could not be completely excluded. Even in the case of infants with open fontenelles these latter are yielding structures and can be easily pressed upon by the atmosphere when the contents of the cranium undergo a diminution of volume from whatever cause.

The question, therefore, has been raised that constituted as the cranium is, practically incompressible, could the volume of the total blood within it be diminished without producing a vacuum somewhere, but where that vacuum could possibly be? Indeed there is no place for such a vacuum. Hence it is argued that "cerebral anæmia, if we regard this as a diminution in the total quantity of blood in the brain cannot exist to any extent." The possibility, therefore, of the existence of arterial anæmia with venous congestion, is suggested, and Hughlings Jackson's Ophthalmoscopic observations, noticed above, are evidently confirmatory of this view. According to Cappie the arterial anæmia is compensated by congestion of the pial vessels, and so there is "an alteration of the normal pressure on the cerebral surface from an expansive to a compressive force." According to Prof. Howell, of the Johns Hopkins University, "the anæmia of the cortex is counterbalanced by the dilatation of the vessels at the base of the brain."

Prof. Bradbury is more inclined to agree with Cappie than with Howell, though he thinks that probably both sets of vessels (basal and pial) are involved. "In either case," says he, "a smaller amount of blood passes through the cerebral vessels in a given interval of time and this is in reality the essential factor. And although I cannot regard a fall in blood-pressure as the primary causal factor of sleep, yet the diminished supply of nutriment thus produced must exert a depressing influence on the metabolism of the cerebral cells and aid in sustaining, if not inducing, sleep."

But is there not a such a thing as considerable depletion of the intracranial fluid contents? We may open the carotid arteries and jugular veins at the same time, and this would certainly diminish the quantity of blood within the cranium. Is there any vacuum produced in such a case? Physically no vacuum can be produced. What then becomes of the incompressible cranium, and of the Kellie-Munro doctrine of the incompressibility of the brain and the constant volume of the cerebral contents? We know that even the adult cranium adapts itself to the shape and size of the brain, when the shape and size have undergone alterations from disease, but this it does in process of time. Can it do so so rapidly as would be necessary to meet the requirements of every day sleep?

Is there no other compensating process than dilatation of the pial and basal vessels? The withdrawal of blood from the brain during sleep cannot be very considerable, and may it not be compensated by the greater fulness of the lymph spaces, peri-vascular and peri-cellular, which have been shown to communicate with each other? The very fact of slowing of the blood-stream in the arteries and capillaries would lead to greater exosmosis from the latter into the lymph spaces, and this exudation, at the same time that it serves for nutrition, maintains the constancy of volume of the whole brain. The greater fulness of the lymph spaces will have, as Guondeau rightly supposes, the effect of further compressing the vessels and retarding the circulation, and thus favouring the pouring out of more and more lymph into the spaces, but this, we think, is a secondary phenomenon, the primary being the retardation of the circulation.

What is the cause of this primary retardation? This has been answered by what is known as the vaso-motor theory of sleep, according to which the fall of arterial pressure is due to the fatigue during the waking state of the vaso-motor centre situated in the medulla oblongata, which controls the vaso-motor nerves of the whole body. "This fatigue of the vaso-motor centre is supposed to be induced by the constant inpouring of sensory impulses during the day's activity. These impulses produce reflex pressor effects and keep up a constant excitement of the centre. When the centre is exhausted the tone of the blood-vessels relaxes, the arterial pressure falls, the brain becomes anæmic, and sleep ensues." But as Leonard Hill's plethysmographic experiments, as already seen, have proved that the fall of arterial pressure may be brought about during the waking state, the vaso-motor theory, it must be admitted, cannot by itself account for the occurrence of sleep.

While Prof. Howell adheres to the vaso-motor, as the true, theory of sleep, regarding the diminished supply of blood to the brain, owing to a relaxation of tone of the vaso-motor centre and the fall of general arterial pressure thereby produced, as the immediate and pre-eminent cause of sleep, he has modified the theory so far as to recognize two other factors as contributory to the same end, namely, (1) a diminution of irritability of large portions of the cortex caused by fatigue, and (2) voluntary withdrawal of sensory and mental stimuli involved in the preparations for sleep. The periodicity of sleep is accounted for by the fact of the rhythmic loss and resumption of tone by the vaso-motor centre. Waking is due partly to the recovery of irritability of the cortex after rest, but chiefly to the augmented flow of blood to the brain that follows upon the constriction of the cutaneous vessels from the recovered tone of the vaso-motor centre.

It must be remembered, however, that, during the waking state there is fatigue not only of the vaso-motor centre, but of the whole body. The vaso-motor centre is but a very small part of the body. Has fatigue of the rest of the body nothing to do with the causation of sleep? If there had been no fatigue there would have been no necessity for sleep. The function of sleep as "that balmy blessing"—"tired nature's sweet restorer," as "sore labour's bath," as "chief nourisher in life's feast" has been recognized by our race ever since its advent in the world. Advanced science may explain how it is so, but that it is so has been found out by common sense reflecting upon common experience.

Life broadly speaking, as we have said, is action. This action consists in the putting forth of energy chiefly in the form of movement. As a living being is finite this expenditure of energy calls for its forage from without. This can be done by assimilating to itself from its environment materials which can supply the needed energy. In this power of assimilation lies the distinction between living and non-living beings. The changes which accompany the assimilative process have been called metabolism (from *μεταβολὴ change*), and these have been divided into two classes, constructive and destructive. The constructive are those changes effected in the external material by which the ingredients of this material are built up into the living substance, it being assumed that the material has ingredients the composition of which is similar to that of the living substance or being. The destructive are those changes which take place in the assimilated ingredients after they have been utilized in the putting forth of the energy or energies peculiar to the living substance or being. The former being changes in an upward direction, consisting in the *elevation* of non-living into living matter, have received the name of anabolic (from *ἀνὰ up*, *βολὴ a throwing*), the latter being downward changes consisting in the *degradation* of living into non-living matter again, have received the name of katabolic (from *κατὰ down*, and *βολὴ*).

If life had consisted simply of the assimilative process for the maintenance of the individual without any other undue putting forth of energy, there would have been perhaps no fatigue properly so called. But the great characteristic of all living beings is not only the putting forth of its peculiar energies, but reproduction of other similar individuals for the continuance of their kind, and [illegible] calls for an action on the part of the individual which is very exhausting. Here, we have the manifestation of fatigue, and fatigue is applicable to the unicellular as to the most complexly-organized living being. In the latter fatigue is experienced by all the organs of which the organism is composed, by all the tissues of which the organs are composed, and by all the unitary cells of which the tissues are composed. Indeed, had there been no fatigue of these units, there would have been no fatigue of the organism at all.

Fatigue is thus due to over-action on the part of a living being, to rapid or too fast living, if we may so call it. The over-action means rapid assimilation of the nutrient material, or as we have seen, rapid anabolic and katabolic changes wrought in this material by the life-principle. If the supply of nutrient material had been inexhaustible, would there have been fatigue? In absence of our knowledge of the ultimate nature of the life-principle which distinguishes a living from a non-living being, it is impossible to answer this question. If the life principle is a force analogous to the physical forces, then in effecting the series of changes in the nutrient material spoken of above for the object of assimilation there must be some expenditure of it, and if so there must be exhaustion and fatigue. The expenditure, it is true, is made up by the very process of assimilation which entails the expenditure, but there must be expenditure before it is made up. And therefore even to the single living cell as the unit of life there is fatigue, and there must be rest. If we could make out how this rest is brought about, we could solve the problem of sleep for complex highly organized living beings. It is easier, however, to attack the problem as regards those latter than as regards lowly organisms.

The vaso motor theory being found insufficient, physiologists were on the look-out for some other factor which might more satisfactorily account for sleep. An attempt accordingly has been made from the chemical side, and a search was directed to detection of loss of some essential ingredient of the blood or the accumulation in it of some waste product, during waking, which is calculated to produce sleep. Pettenkoffer and Voit discovered in 1866 that there is greater absorption of oxygen during the night than during the day, and as there is greater consumption of it during hours of activity Sommer has put forth the theory that the cause of sleep is impoverishment of oxygen in the brain, and that it makes its appearance as soon as the reserve of the gas in the tissues and blood is exhausted. Pfluger went a step further and suggested that "the waking state is maintained by the violent oscillations, almost comparable to small explosions, taking place in the molecules of the cerebral substance owing to the combination of the intra-molecular oxygen with the carbon of the tissue. These vibrations diminish towards [illegible] used up, the explosions become feebler, the activity of all nervous processes less, mental operations are conducted with less energy, the exhausted and quiescent nerve-centres no longer easily aroused by impressions from without, and sleep results." These explosions are, we must say, purely imaginary. They have no support from fact.

Among the products of retrograde or katabolic metamorphoses of the tissues, especially of the brain tissues, lactic acid is one, and having found that this acid hypodermically injected causes sleep, Preyer has come to the conclusion that the accumulation of this katabolic product in the blood is the cause of sleep. It has, however, been found by others that artificial injection of this acid is not followed by sleep. There must have been, therefore, some fallacy in Preyer's experiments and his theory must fall to the ground.

Prof. Leo Errera of Belgium has been maintaining since 1885 that leucomaines or animal alkaloids which result from normal metabolism accumulate in the blood and produce the intoxication which we call sleep. He has been led to this view by the supposed discoveries of Bouchard that in the night urine there are convulsant substances which are not to be found in the day urine, and that toxicity of the day urine is greater than that of the night urine. Hence Bouchard imagined that "during the day the body manufactured a *somnolent* substance which by its accumulation produced sleep, and that during sleep a *convulsant* substance was formed which by inducing muscular movements produced awaking.

Notwithstanding that Beck and Herringham's experiments have not confirmed the results arrived at by Bouchard, Errera believes that leucomaines do play a predominant part in the production of sleep. This is what he says: "Work in the organism is indissolubly bound up with a chemical breaking down. Among the products which result the leucomaines figure. Borne along by the blood they are without doubt retained by the cerebral centres, and as many of them have a fatiguing and narcotic action they must at length produce fatigue and sleep. During activity more leucomaines are formed by this breaking down than [illegible]. But during sleep they are destroyed in [illegible] way. These oxidation products, having no special affinity for the protoplasm of the grey substance, are washed away by the blood-stream. The nerve-cells thus [illegible] stimuli [illegible] to produce awakening. Work, fatigue, sleep, reparation and awakening are thus most intimately [illegible] bound together in [illegible] chain and necessary cycle." Now if leucomaines as products of fatigue had really narcotic properties, an excess of such leucomaines resulting from excess of fatigue would be expected to produce deeper sleep. But the fact is the very reverse of this, for it is well known that excess of fatigue, instead of producing, prevents sleep. The [illegible] and [illegible] to the leucomaine theory [illegible] object [illegible] by drawing attention to the fact that [illegible] vary according to the dose, [illegible] produce [illegible] excitement and even convulsions [illegible].

With reference to this theory, Dr. Bradbury [illegible] rightly observed that it is difficult from the existence of certain substances in the urine to draw conclusions as to the cause of sleep. "The urine," says he, "is a complex body, it varies largely in composition with the kind of food, amount of exercise and other physiological and pathological conditions, and the variation is greater with this than with other secretions. It does not seem right to compare the variability of the composition of the urine with the periodic alterations in the temperature and the pulse; the limits of the first are much wider." Without implying that metabolic changes have no influence in the production of sleep, Dr. Bradbury maintains, and we think rightly, "that sleep has not been proved to be due to any one substance or group of substances present in the urine." Marie de Manaceine's objection to the theory is that it does not explain the power we possess of postponing sleep, or of awaking at a fixed hour."

(To be continued.)

REVIEW.

The Porcelain Painter's Son: A Fantasy. Edited with a Foreword, By Samuel Arthur Jones, M.D. Boericke & Tafel, Philadelphia, 1898.

We must confess our inability to fathom the purpose which underlies the publication of this booklet, unless it be to serve as a foil for the Foreword at the beginning and the Address at the end.

Was there necessity of fantasy to present Hahnemann to the profession and to the laity? "It is a fantasy," says Dr. Samuel Arthur Jones in his Foreword, "but one that is founded upon a solid substratum of fact—serious fact to the porcelain painter's son, who lived it nearly a century agone. Fact and fancy are united to form the fabric; the web of a man's life is here, the flowers of fancy are wholly in the woof."

The author says: "I found the web of fact in Hahnemann's life; the woof of fancy alone is mine. The fantasy is a 'projection' not at all difficult when a deep reverence inspires the attempt to people the dead past, to even live therein in the company of actors upon whom the prompter has long since rang down the current."

We object to the word fantasy as applied to any sketch of Hahnemann's life, and not less to that we have in this book. Fantasy is not simple fancy; it is irregular, erratic, wild fancy; it is unrestrained imagination. Its true signification has been well indicated by Shakespeare in the following lines—

> Lovers and mad men have such seething brains,
> Such shaping fantasies, that apprehend
> More than cool reason ever comprehends.

As the character of the portrait drawn by the anonymous author is not such as indicated above, he has done himself a wrong by characterising it as a fantasy, and rendered his interesting work at the first sight uninviting to the reader. That we are not altogether wrong in expressing this opinion may be seen from the fact revealed in the "Foreword" that "both the author and his publishers have asked a slender service of the editor: to separate web from woof, and this for the sake of those who are not possessed of that knowledge of Hahnemann's career which the benefits that many of such readers have had from his labors would seem to make the obligation of a becoming sense of gratitude." Now this want of "a becoming sense of gratitude" is observed not only among the laity, but among the professionals also. "We do not learn," says Dr. Jones, "that Bradford's *Life of Hahnemann* is 'out of print,' nor are we especially concerned when a generous publisher finds himself 'out of pocket' for an endeavor to provide us homœopathic physicians with the bread of professional life—if indeed many of us are alive, at least, to our duty."

Now if Bradford's exhaustive *Life of Hahnemann* is still not out of print, and if it and other shorter *Lives* published before, have not been able to interest the homœopathic profession and the lay public, is it expected that this fanciful if not fantastic sketch of the Porcelain Painter's Son, which has required an interpreter to separate the web of fact from the woof of fancy, would succeed in bringing home to the professional and lay mind the wonderful lessons of a most wonderful life? Is it expected that this little book would be able to carry the banner of homœopathy further and wider than has already been done by so many workers since the time of Hahnemann, workers not less earnest, enthusiastic and devoted than the author himself?

Hahnemann's life was romance throughout, from beginning down to the very end. Can the spice of fiction make it more romantic? Take the following simple narration by Hahnemann of his indebtedness to his father for his intellectual and moral training: "Without being deeply versed in science he (my father) had the soundest ideas of what may be considered good and worthy, and he implanted them deeply on my mind. To live and to act without pretence or show was his most noteworthy precept, and his example was even more impressive than his words. He was always present, though often unobserved, in body and soul wherever any good was to be done. In his acts he discriminated with the utmost nicety between the noble and the ignoble, and he did it with a justness which was highly creditable to his tender feelings. In this respect, too, he was my preceptor."

Is the importance of the simple fact narrated above improved by the following fiction invented by the author? "One little lad, some twelve years of age, was the constant companion of the porcelain painter in such hours of leisure as his toilsome life allowed. Sunday after Sunday and on all holidays hand in hand they took their walks; and the father made Nature the book from which he taught his child. From flower, and leaf, and bird, and beast he had gotten his fresh and faithful designs for the pictures he painted on the porcelain vessels; and from long communion with nature he had learned something of the rare art of seeing. This he fain would teach his boy, leading his fresh young mind the while from the wonders of the created to the grandeur and glory of the Creator." The conception is beautiful, but unfortunately there is no shadow of foundation for it in fact. And as it appears to us, the Porcelain Painter was too prosaic and perhaps also too busy to indulge in the excursions with his son here depicted.

Again, as regards the "lessons in thinking" which the father used to give to the son, the fact, as narrated by Dr. Bradford, is, that "an old man in Meissen, who had forgotten the son, when he heard of his fame, said smilingly: Many a time have I taken a walk with his father, and ever at the certain hour he would say: I must go home now, I have to give a lesson to my son Samuel, a lesson in thinking; that boy must learn to think." We do not think that this is improved at all by the fiction of the night incident at the Tavern which the author has given at the end of the 1st chapter.

Hahnemann has told us in his autobiography: "My father did not wish me to study at all: he repeatedly took me from the public school for a whole year, so that I might pursue some other business more suited to his income. My teachers prevented this by not accepting any pay for my schooling during the last eight years, and they entreated him to leave me with them and thus indulge my propensity for learning. He did not resist their entreaty, but could do nothing more for me. On Easter, 1755, he let me to go to Leipsic, taking with me twenty thalers for my support. This was the last money received from his hand. He had several other children to educate from his scanty income, enough to excuse any seeming negligence in the best of fathers."

It will be seen that Hahnemann says nothing of the clay lamp that he is related to have used for the purpose of reading at night unsuspected by his father. Albrechts, in his *Hahne-*

mann's Leben und Wirken (Life and Work), thus relates the story as given by a reliable witness: "His father tried to prevent him from becoming deeply interested in reading and study and probably may often have wished to frighten him from his books. The boy would endeavour to hide, and would flee with his beloved books to the remotest nooks of the house. The light there was not always sufficient, for we are told that he made for himself a lamp out of clay, with which to study in these nooks because he feared that his father might miss a light, and subsequently put a stop to his cherished occupation."

On the above basis the author has composed his second chapter in which he has portrayed Hahnemann the student. The first half of the chapter is taken up with the delineation of an incident of remarkable dramatic beauty. Hahnemann's mother was anxious that her son Samuel should continue his studies which her husband was determined to prevent. She arranged with the school master, Herr Müller, that he should visit him of a morning and dissuade him from his resolve. Herr Müller accordingly visited the porcelain painter when he was busy tilling cabbages in his garden. An animated conversation ensued, in which after a time the wife joined, and at an opportune moment placed the little rude clay lamp which Samuel used to read by and addressed him thus: "O House-father, strive not against the will of the Lord! See this. When you forbade the boy to go on with his books, he made this lamp that he might secretly study with the oil I stole for him. Had he taken a house lamp you would have missed it and found him out. You can put out the boy's lamp, but, O House-father, there is a light in the boy that only God who gave it can put out." These words, with the assurance from the school master that there need not be any anxiety on the score of the boy's schooling fee, softened the heart of the stern husband and the stern father, and thus all obstacle to the son's future career was removed.

According to Dr. Jones the whole incident is "a pure figment." We, therefore, must say that we cannot attach any value to it, except that it is a fine imaginative literary composition. We cannot congratulate the author on the taste displayed in his portraiture of the poor schoolmaster. To make his rejoicing over his pupil's success pass the bounds of sobriety so that "his tongue clave to his mouth, and he could only stammer in helpless confusion" and had to be "again put to bed," is to do injustice to a really good man. And we agree with Dr. Clarke that "unless there is historic ground for this, it is (at least) a mistake."

What shall we say of the address "which has been put in as an appendix at the editor's sole instigation." The following is the editor's opinion of it: "In the address he openly reproves the homœopathic school in America for lapses that are not to its credit. He plainly intimates that homœopathy to-day is taken up as a trade rather than espoused as a Cause needing advocates who are penetrated by its truths. He insinuates, at least to our understanding as we heard it spoken, that the mercantile spirit rather than the scholastic prevails in both professor, practitioners and students. The supreme aim and end is the diploma rather than the qualification for it; the legal right to practise, without that moral right lacking which no graduate in Medicine is other than a peril to whomsoever shall entrust life to *him*."

Dr. Jones says nothing of the language of the address, and we therefore take it that he approves of it. We must say, we cannot. We admire the vigor and the fervor of the author's convictions, but we cannot admire the violent language in which they are often conveyed. Much of what he says in "reproof for wrong-doing, mis-doing, *not* doing" is true and ought to command respect as "the friendly warning of the first and oldest worker in this field." The manner of saying a thing may make it unacceptable even if based upon the irremovable bed rock of fact. Homœopathy, we are almost sure, would long have been accepted of the profession had it not been urged forward with the intolerance and the supercilious air of infallibility and the violent language which characterized its founder in the last years of his life. His disciples ought to take warning from his example. Let them imitate the best and not the worst traits of his character. Even the author of the *Fantasy* has to admit that in one instance at least Hahnemann forgot Newton's "Hypotheses non fingo," and that he advanced a hypothesis which was "a flimsy figment." Why condemn others in language of rancor and reproach if they point out other similar instances?

Notwitstanding all that out of a sense of duty we have said, we must cordially thank the unknown author for the pleasure and profit we have derived from a perusal of his book. Though he says "he is too near the end of the road," we sincerely pray for his longer stay that he may serve as a beacon-light to the younger generation.

A Text-book of Materia Medica and Therapeutics of Rare Homœopathic Remedies. A Supplement to Dr. A. C. Cowperthwaite's "Materia Medica" or Every Greater Materia Medica. By Oscar Hausen, M.D., of Copenhagen, Denmark. Corresponding Member of the British Homœopathic Society and of the American Institute of Homœopathy. The Homœopathic Publishing Company. London, 1898.

THIS is a book by a distinguished Danish physician, got up in the best style of the Homœopathic Publishing Company, both printing and paper being excellent. It consists of 121 pages including Title-Page and Index, 110 of which being devoted to the actual matter of the book, the materia medica, consisting of no less than 378 drugs.

The author thinks that "a physician, by means of the text-book of Cowperthwaite and with the help of the present Supplement, will now have the whole homœopathic materia medica at his disposal." The plan of treatment of the drugs adopted by the author is to give their *Characteristic symptoms* and their *Therapeutics*, or the one or the other, according as both or either are available. It is of the large majority of the drugs treated of that we have either characteristic symptoms alone or therapeutics alone, and of a small number only that we have both. The characteristic symptoms are generally few, derived from the slenderest provings.

Whether the author has been right in entitling his work a Text-Book of Rare *Homœopathic* Remedies may be questioned, when we mention that of the 378 drugs treated of, the therapeutics alone without the characteristic symptoms are given of no less than 212, and when it is remembered that even the characteristics when given are of the problematic character described above, that is, from provings which scarcely deserve the name. To justify what we say we give at random the following instances:

ARUNDO MAURITANICA.

Therapeutics.

Constant diarrhœa of nursing children. Catarrh of the middle ear. Eczema of the chest, upper extremities and behind the ears. Eruption papular; intolerable itching and crawling sensation. In young children.

ASIMINA TRILOBA.

Therapeutics.

Acne: itching red pimples, first on the left, then on the right side. Pustular acne with itching in the evening, when undressing.

ATROPINUM.

Characteristic Symptoms.

Delirium; when spoken to often turns his head to the wrong side. Unconsciousness. Sticking in base of skull, and especially over eyes, on every motion, and aggravated by stepping. Feeling as if screwed up, and walking caused sticking. Sticking in left temple in morning on waking, extending behind ear, aggravated by moving about in open air. Pupils dilated. Diplopia. Red and hot face. Expression of mania. Dryness in the throat. Swallowing produces suffocative spasms, is painful, with grimaces and facial spasms. *Vomiting of milk and of all food.* Contractive, burning, pressing pain of the pit of the stomach with soreness. Empty eructations. *Stiffness of left knee, left leg, and in right great toe.* Redness like scarlatina over face and upper half of body ; skin hot and dry.

Therapeutics.

Neuralgia, supraorbital, aggravated by emotions, under the knee, ameliorated by wrapping up warmly. Ear-ache, meningitis, spinal irritation, scarlatina with *Belladonna* symptoms. *Atropine* is best adapted in the purely neurotic sphere of *Belladonna* symptoms *(Casper)*. Chronic affections of the stomach, especially ulcus ventriculi, with great pains and vomiting of all food. *(Bähr, Kafka;* confirmed by author in many cases). Also recommended in syphilis, gall-stone colic, peritonitis, and in the sweat stage of intermittents *(Puhlmann)*.

MYOSOTIS ARVENSIS.

Therapeutics.

Phthisis pulmonum, with copious purulent sputa, emaciation, and night sweat.

MYRISTICA SEBIFERA.

Therapeutics.

The main remedy in elephantiasis arabum *(Kippax)*.

MYRTUS COMMUNIS.

Characteristic Symptoms.

Stitching pain in the left breast, running through to the shoulder blade, often in consumptives. (Compare *Anisum stellat.*, *Pix liquida*, and *Theridion.*)

To speak of drugs as *homœopathic* remedies which have not the true homœopathic basis of provings, and which therefore cannot be used on the lines indicated by the homœopathic guide-law, is not to call things by their proper names. We fully admit that the *proved* homœopathic remedies, though their number has become pretty large now, are not sufficient for the treatment of all the ills mortal flesh is heir to, and we do not question the right of the physician, in cases of failure with such drugs, to use any others which might not have been proved but which enjoy the reputation of having effected cures. But we must confess and declare that we are not practising homœopathy in such cases. We must on no account sail under false colors. When we say this it must not be understood that we mean any disparagement to the actual and suggestive utility of the work under review. It is a compilation which reflects great credit on the industry of the author, and we doubt not it will be of real use to the busy practitioner.

EDITOR'S NOTES.

Complete Transposition of Viscera in Adult.

KOLLER (*Virchow's Archiv*, vol, clvi, Part 1. April 21st, 1899) describes a complete dissection of the trunk of a woman, aged 31, who was found dead in her bath several years ago. Much of her history was lost; thus it could not be ascertained if she were born a twin or if she were left-handed. She had been subject to epilepsy when a child, and later on had two attacks of pneumonia. She was also troubled with lateral curvature; the concavity lay to the left. The trunk, after careful injection of the veins and arteries when the transposition was detected at the necropsy, was preserved for some time in spirit, but has recently been dissected with great care, Koller publishing a full report. The case is an instance of "situs viscerum inversus totalis regularis." The right lung had two lobes, the left four; the heart lay to the right, the normal relations of its chambers and the vessels associated with them being reversed. The liver lay to the left, the spleen and stomach to the right; the sigmoid flexure passed to the right of the sacrum. Some of the organs showed infantile features; thus, the liver was very large, and the spleen shaped as in normal infancy But the uterus and ovaries were normal.—*Brit. Med. Jour.*, July 15, 1899.

A Singular Case of Mastoid Abscess.

It is a generally accepted fact that the cells in the mastoid process do not develop until after the third year of life and it follows that mastoid abscess of the kind found in the adult is practically unknown in infancy. An apparent exception to this rule is quoted in the *Journal de Clinique et de Thérapeutique Infantiles* of June 1st, 1899. The case was reported by Dr. Lermoyez to the Société Française d'Otologie, Laryngologie, et Rhinologie and was that of a child, aged two and a half months. The starting-point of the trouble as usual was an acute purulent otitis. After three weeks an abscess was found beneath the upper extremity of the sterno-mastoid. A cavity in the mastoid process full of carious bone and pus communicated on the one hand with the mastoid antrum and on the other by a small opening in the digastric fossa with the abscess just described. The whole end of the process was removed, the cells and antrum were cleared out, and the child was well in six weeks. This morbid condition which is known in France as the mastoiditis of Bezold is very rare if not unique in an infant and its occurrence almost at the time of birth is of equal interest to the anatomist and the surgeon.—*Lancet*, June 17, 1899.

Recovery After Taking a Large Quantity of Corrosive Sublimate.

The following case of poisoning by corrosive sublimate which was published in the *Gazette Médicale du Centre* of June by Dr. Joulia is remarkable in that recovery followed such a large dose. A woman, aged 28 years, desiring to poison herself on account of a love trouble, took dissolved in Malaga wine the contents of packages of corrosive sublimate (made up for baths). She swallowed exactly 370 grains of sublimate and the same quantity of tartaric acid. When seen she was incessantly vomiting and only asked for drink. The pulse was 140, small and irregular. The tongue, mouth, and pharynx were dark red and swollen. The stomach was immediately washed out. The tube was introduced with pain and difficulty whilst the patient was hiccoughing. 35 pints of albuminous water to which flour was added were used. An emetic of ipecacuanha was then given. The patient was collapsed; three and three-quarter grains of caffeine were injected and the pulse gradually improved. Swallowing was intolerable, only ice could be taken. On the following day there were complete anuria and diarrhœa. On the third day 10 ounces of urine containing albumin, blood, and casts were passed. Recovery ensued. The patient undoubtedly owed her life to the fact that her stomach was so thoroughly washed out a quarter of an hour after taking the poison.—*Lancet*, July 15, 1899.

Disposal of the Dead Between Death and Burial.

Although Section lxxxix of the London Public Health Act does provide for the removal to a mortuary by order of a Justice of the Peace, under a medical certificate, of bodies of persons dying of other than infectious diseases, if their retention in a sleeping room or dwelling house be obviously dangerous to the health of the inmates, the power is rarely exercised except in the case of infectious diseases, and in houses where there "is no vacant room available." Yet there can be doubt as to the danger and impropriety of keeping a corpse in an inhabited house for several days, perhaps for a whole week, though so long as mortuaries are practically appanages of the coroner's court, their associations will inspire a not unnatural repugnance to the removal thither of the dead, save under urgent necessity. In Munich the difficulty has been overcome by the provision of a public edifice of a solemn and imposing appearance, to which all bodies, without exception, must be removed within twelve hours after death, and where they remain until the funeral, which need not take place for several days. Those who choose to pay for the privacy may have the use of small separate apartments, but the majority among all classes prefer to avail themselves of the large hall separated from the public corridor by plate glass partition, where the coffins, left open until commencing cadaveric changes leave no doubt as to the fact of death, may be seen decently arranged, and with such display of floral wreaths and lighted candles as the affection or religious observances of the relatives may prompt. Every painful and repulsive suggestion of the morgue is absent, and the surroundings are made as solemn and attractive as possible. Munich has in this set an example which might with advantage be followed by all great cities.—*Brit. Med. Journ.*, June 3, 1899.

Results of Transverse Section of the Spinal Cord.

Schäfer (*Journ. of Physiol.*, March 1899) describes experiments on this subject. They were chiefly carried out on the monkey, a few on the cat. They consisted in attempts to establish lesions involving (1) hemisection, (2) section of dorsal cerebellar tract on one or both sides, (3) section of ventral cerebellar tract on one or both sides, (4) section of dorsal and ventral cerebellar tract on one side. The physiological results of hemisection of the cord were as follows: Complete motor paralysis of all parts supplied with nerves below the section. The limb of the paralysed side was swollen and warm (vasomotor paralysis and lessened outflow of lymph), the skin was dry. Knee-jerk exaggerated. Sensation was not lost on the same side as the lesion, but it was at first dulled. After a few days unmistakable signs of feeling and localising even a slight touch, and this long before the motor paralysis had passed off. No sign of paralysis, either motor or sensory, on the side opposite to the hemisection. Purely voluntary movements are not recovered, although all the ordinary associated movements of the limbs are recovered. After three or four weeks it is difficult to detect any sort of paralysis, but the limb which has been paralysed is thinner than the other. If hemisections be made above the level of the eight cervical nerve, the pupil on the same side is relatively contracted and remains so. The pupil reacts to light and shade in spite of its being persistently smaller than the other. Excitation of the motor cortex of the opposite cerebral hemisphere produces as a rule no movements in the limbs which have been paralysed, even if the associated movements have long returned. Lesions of the cerebellar tracts, either together or singly, produce no obvious symptoms. After hemisection the cells of Clarke's column below the lesion undergo chromatolysis, and eventually almost complete atrophy The atrophy is equally complete if the lesion is confined to the dorsal and ventral cerebellar tracts. It is, therefore, to be inferred that Clarke's column gives origin not only to the dorsal cerebellar (tract of Flechsig), as shown by Mott, but also to the ventral cerebellar tract (tract of Gowers). Clarke's column has also an important relationship to the fibres of the pyramidal tract. After lesions involving these fibres, degenerated fibres are seen passing from the pyramidal tract (below the lesion) towards Clarke's column. No degenerated fibres are traceable from the pyramidal tract into the anterior horn or into any part of the grey matter other than the base of the posterior horn or Clarke's column.—*Brit. Med. Journ.*, July 15, 1899.

Poisoning by the Tincture of Nux Vomica: Death in Two Hours.

The following is, I believe, the first recorded case of poisoning by the tincture of nux vomica of the new *Pharmacopœia*. I was called in July, 1898, at 2 P.M., to see a woman who was reported to have fallen and injured her head. She was lying semi-conscious on the floor, with a large but not dangerous scalp wound.

On examination it was at once seen that the injury to her head was not the cause of her symptoms. It transpired that she had swallowed 6 drachms of the tincture of nux vomica in mistake for another drug. She quickly developed symptoms of strychnine poisoning: severe muscular twitchings developing into general tetanic spasms, and on three occasions definite general convulsions with loss of consciousness. During the intervals she was quite lucid and conscious, complaining of great thirst, dryness of the mouth and throat, a suffocating sensation and fear of impending death. Her pupils were widely dilated, her lower extremities powerless, her skin dry, respirations quick and deep at first, changing later into the cheyne Stokes rhythm, and the pulse was hard and compressible. The slightest touch readily excited a general spasm, and she was very intolerant of light and sound. Exactly two hours after swallowing the fatal dose, she died during the third attack of general convulsions, and was not resuscitated after half an hour's artificial respiration.

It was found quite impossible to pass the tube of the stomach pump, as my attempt to do so at once brought on tetanic spasms, and on administering chloroform she developed such dangerous symptoms of syncope that this had to be abandoned. Accordingly one-eighth of a grain of apomorphine was injected subcutaneously, but this had no effect whatever in producing vomiting, the dose being repeated in half an hour with a similar negative result. Two doses of chloral hydrate, [illegible] each, were given by the mouth at intervals of half an hour, and during the third attack of general convulsions a drachm of ether was injected subcutaneously, and hot flannels were applied to the precordial region.

At the *post-mortem* examination the body was found fairly well nourished; rigor mortis was well marked, especially in the lower extremities. The scalp wound was found not to have caused any injury to the bone. The face, arms and neck were greatly discoloured. The lungs were deeply congested; there were some old adhesions, but no other signs of organic disease. The heart was contracted and empty; its valves were quite healthy. The blood was fluid, and of a very dark bluish-red colour. The stomach was greatly distended and full of undigested food; the mucous membrane was congested, especially at the cardiac end. The intestines were apparently quite healthy, as were the liver, spleen, and kidneys. No analysis of the contents of the stomach was made.

The chief points of interest about the case seem to be (1) That the fatal dose was three-quarters of a grain of strychnine, (2) that comparatively rapid action of the dose; (3) that the pupils were widely dilated and there was loss of consciousness on three occasions; (4) the failure of apomorphine to produce vomiting and (5) the dangerous symptoms induced by the exhibition of chloroform.

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--*Brit. Med. Journ.*, July 1, 1899

Changes in the Salivary Glands in Diabetes

In the *Boston Medical and Surgical Journal* of May 18th Dr.

H. F. Harris has published an interesting paper on this comparatively unknown subject. His attention was first directed to a possible relation between morbid conditions of the salivary glands and pancreas by the following case in which diabetes followed mumps. The patient was a farmer aged [illegible] years, who had had no illness until an attack of mumps three years before. About a month after recovery he noticed that he was passing more urine than formerly, and since then the increase had slowly but steadily progressed and the other symptoms of diabetes appeared. He was much emaciated and passed in the 24 hours 6410 cubic centimetres of urine containing 4·6 per cent. of glucose. His subsequent history is unknown. The writer found in literature several references to the fact that diabetes sometimes follows mumps. He also ascertained that by the removal of all the salivary glands in [illegible] a slight transient glycosuria could be produced, a conclusion which had been previously established by Reale (Congress of Berlin, [illegible]). In these latter experiments he produced glycosuria in this way in dogs, which he had failed to do by removing the pancreas. Since the publication of Schmackpfeffer's thesis in 1881 on diseases of the pancreas the possibility of pancreatitis arising from mumps has been admitted, but there is some doubt as to the nature of the case to which he referred. Dr. Harris could not find another case of pancreatitis due to mumps. But when it is remembered that sublingual and submaxillary adenitis, orchitis, prostatitis, ovaritis, mastitis, [illegible] and thyroiditis have been observed, it seems probable that a gland so closely resembling the parotid as does the pancreas would at times be involved. Also, as in the parotid and testicle, atrophy might occur. That functional alterations in the salivary glands occur in diabetes has long been known, but the condition has received little attention from clinicians and pathologists. The following case shows that pronounced changes sometimes occur in the salivary glands in a very [illegible] way resembling those found in the pancreas. A man aged [illegible] years died from diabetes complicated with pulmonary tuberculosis and gangrene of the foot. The body was much emaciated. The pancreas was found to be very small, weighing only [illegible] ounces. It was hard and nodular and on section showed numerous fibrous bands. There was evidently atrophy secondary to old interstitial pancreatitis. All the salivary glands were small. Microscopically both the pancreas and salivary glands showed identical changes. There was marked thickening of the trabeculæ which bound the lobules together. In some parts all the acini of a lobule were destroyed and replaced by newly formed fibrous tissue. The parotid acini had a diameter from 10 to 20μ (in a normal parotid the diameter was from 20 to [illegible]μ). Microscopical examination of the other organs showed them to be normal.—*Lancet*, June 17, 1899.

Plumbism and Appendicitis

Recently we called attention to some cases of plumbism reported in the *Journal of the American Medical Association* by Dr. J. P. Lord in which the intestine was contracted so as to resemble a solid cord and appendicitis and other abdominal conditions were simulated. A paper read before the Société Médicale des Hôpitaux of Paris on June 16th by Dr. Le Gendre is of interest in this connexion as, whilst in no way invalidating the observations referred to, it presents the subject in an entirely new light, for not only has lead colic been mistaken for appendicitis, as Dr. Lord has shown, but, conversely, appendicitis in the subjects of chronic plumbism has been mistaken for lead colic. Further, Dr. Le Gendre brings forward evidence to show that lead colic may be followed by appendicitis and that the latter may be a result of plumbism. Dr. Le Gendre first quotes two cases published in the *Presse Médicale* of March 8th by Dr. Sergent, which show the difficulty of diagnosing between lead colic and appendicitis. A painter, the subject of chronic plumbism, was seized with acute abdominal pains which he recognised as lead colic and which were accompanied by symptoms so typical that his medical attendant had no doubt as to the diagnosis. The patient died from subacute appendicitis without any apparent signs of general peritonitis. At the necropsy a gangrenous appendix perforated in two places was found. This experience enabled Dr. Sergent to diagnose appendicitis in another case of plumbism. The patient entered hospital for lead colic—a diagnosis which was adopted by the *interne.* Operation showed appendicitis of the hypertrophic follicular form. In a case under the care of Dr. Le Gendre the same mistake was made; but the *interne* noticed that the tenderness was sharply localised to McBurney's point and that there were slight fever and rapid pulse. The course was that of mild appendicitis and recovery took place without purgatives. But there is another aspect of the question. Lead colic and appendicitis may occur successively in the same patient, as the following case shows. A grinder of colours, aged 25 years, was admitted to hospital a second time for lead colic. There were constipation, general abdominal pains, and vomiting. The abdomen was hard and tense and flat rather than tympanitic; moderate pressure was painful and deep pressure even in the right iliac fossa diminished the pain. The face was pale, there was a well-marked blue line on the gums, the breath was fœtid, and the pulse was 42. On the third day there was a considerable stool, but the symptoms persisted and the temperature rose to 103°F.; vomiting recommenced, and the appearance of the abdomen altered. It became typanitic and tender to even superficial pressure, but the tenderness was confined to the hepatic and right iliac regions. The patient hiccoughed frequently. Later the greatest tenderness was definitely confined to McBurney's point and in this position there was well-marked "muscular defence." Dr. Le Gendre's surgical colleague, M. Chaput, confirmed the diagnosis of appendicitis and offered to operate, but the patient declined. Recovery ensued. Tenderness at McBurney's point remained for some days after the disappearance of the other symptoms. The connexion between the lead colic and appendicitis might be explained by supposing that the lead acts injuriously in some way on the appendix so as to favour infection.—*Lancet*, July 15, 1899.

Sewer Air and Its Dangers.

A few months ago two men met with their death whilst working in a sewer in Manchester. The cause did not seem to be discovered at the time but it was thought to be the turning of some deleterious matter into the sewers from chemical or other works in the neighbourhood. On June 5th three men lost their lives in a catch-pit on the Wigan outfall sewer. One of these men had been following this kind of work—namely, emptying the catch-pits of sediment—for 18 years. Although instructions had been given to this man years ago to take off the cover some time before going down and to put down a lighted candle to see if it would burn these precautions appear never to have been taken. A few days after the Wigan fatality a man lost his life in a sewer at Rochester. At the inquest on the Wigan victims held by Mr. Brighouse, county coroner, it was stated in evidence that a gang of six men were directed to clean out the catch-pits which are on a line of the outfall sewer for about three miles in length. These catch-pits are for the purpose of catching the sediment or silt which gets into the sewage and they are cleared out periodically every six or seven weeks or even at longer intervals. On the morning of the accident (June 5th) two men went to No. 1 catch-pit, took off the cover, and emptied it out. The practice is that one man descends and fills the bucket whilst the other hoists it to the top. Two other men went to catch-pit No. 2 and two to No. 3; this went on alternately till catch-pit No. 6 was reached, where one of the men, who was 63 years of age, on descending appeared to have been overpowered by gas or vapour, for he fell into the sewage and a fellow workman going down to help him out was overcome in the same manner. An alarm was raised and the two men who were going to No 7 catch-pit returned; one of these descended No. 6 catch-pit and met with a similar fate. A collier now went down to place a rope round the men, but he also was overpowered and had to be brought to the surface with a boathook. Dr. Stirling of Standish was soon on the spot and with artificial respiration and restoratives the collier eventually recovered. The other three men were quite dead. The gas in this catch-pit rapidly overpowered its victims. Why it should have been in this particular catch-pit (No. 6) and not in the five others it is difficult to say, for there is nothing between catch-pit No. 5 and No. 6 that would allow anything deleterious to be admitted. The medical officer of health (Mr. W. Berry) was called to give evidence and he expressed the opinion that the gas was carbonic acid gas, that through some special cause it was generated in this No. 6 catch-pit, and that the following precautions should be adopted in future: (1) taking off all the covers first; (2) allowing a reasonable time to elapse before going down; (3) pouring limewater into the catch-pit and stirring the contents; and (4) lowering a lighted candle to see if it will continue burning or not. These suggestions met with the approval of the jury, for they returned a verdict of "Accidental death," not attaching any blame to the corporation. They also recommended that the corporation should take steps in the future to ascertain whether the sewer and catch-pits were free from noxious gases previously to the catch-pits being cleaned out and thought that the suggestions of Mr. Berry should be carried into effect. The sanitary committee of the corporation have since "referred the question of emptying these catch-pits to the medical officer of health and the borough engineer for consideration and report as to whether any, and if so what, means can be adopted to have the work carried out without any risk to life or danger to health."—*Lancet,* July 1, 1899.

Hemiatrophy of the Brain without Disturbance of Intelligence or Personality.

Dr. Pearce Bailey of Columbia University, New York, gives an account of a case worthy of record on account of its remarkable character and because it has important bearings on the localisation of psychical functions. A man, aged 57 years, a carpenter by trade, was, according to his own statement, strong and well up to the age of 47 years. His habits were temperate, he was free from syphilis, and was married and had children whom he supported. When he reached the age of 47 years or thereabouts he awoke one morning to find his left side numb and powerless. The ordinary severe symptoms of apoplexy were absent, but the paralysis was complete, so that the face was drawn to the right side (left facial paralysis) and the left arm and leg were entirely useless. After a while the facial condition began to improve, whereas the arm and leg began to undergo atrophy and contracture. There was little or no return of voluntary power in the affected side, and he remained thus crippled for the rest of his life. There was no defect in the action of the sphincters or in the special senses, and though the patient sometimes complained of feelings of numbness on the left side, no cutaneous anæsthesia could be found. As regards the psychical functions, speech was perfectly normal, the ability to read was not interfered with, and memory appeared unaffected. "He was courteous, intelligent, and patient, cheerful and attentive, his power of attention was good, he read the papers, ... took an interest in affairs, ... was fully conscious of his infirmity and bore it bravely, was free from depression or emotional excitability or apathy, cleanly in habits and person, and was free from the manifestations of mental deterioration so common in gross brain lesions." In the summer of 1897 he died from intercurrent attack of pneumonia. The necropsy revealed the following conditions. The left crebral hemisphere seemed normal. The right hemisphere in its post-Ronaldic part showed slight general diminution (atrophy), the pre-Rolandic portion showed *extreme* atrophy and degeneration, the greater part of the frontal lobe being occupied by a soft œdematous mass—the remnants of the frontal lobe—which on section was of a dirty-white fibrous appearance and showed no grey matter. The basal ganglia of the right side were extremely atrophied, the right half of the pons was half the size of its fellow of the opposite side, and similar but less marked differences occurred in the bulb and below the pyramidal decussation. The anterior commissure seemed destroyed; the cerebellar lobes were equal. The basal vessels of the brain were thickened and atheromatous, and the right internal and middle cerebral arteries were cord-like with very small lumina. Microscopic examination with Nissl's method of the right frontal mass showed an oedematous vascular tissue and connective tissue membrane, but there were no traces of ganglion cells. The left cerebral cortex (various portions) showed normal nerve cells slightly changed owing to the pneumonia. The right cerebral cortex (post-Rolandic part) showed considerable scattered degeneration of cells in varying degree, with an almost total absence of the large pyramidal cells and a marked endarteritis of all the pial vessels. In the right hemisphere therefore, while the nerve elements of the post-Rolandic portion were much degenerated, those of the frontal (pre-Rolandic) region were altogether destroyed. After referring to the view of Bianchi, based on experiments on dogs and monkeys on the frontal lobes, viz., a centre in which the [illegible] the centres as well as the emotional state [illegible] impulsive [illegible] are [illegible] represented, Dr. Bailey expresses the [illegible] statement [illegible] not necessarily [illegible] after frontal [illegible] quoted above is regarded as showing that the right frontal lobe can be entirely destroyed without [illegible] mental function or change in character. The [illegible] that the present synthesising function of the frontal lobes is [illegible] exclusively neither on the right side nor the left, but that it is bilateral, and that under certain circumstances the function can be assumed and successfully carried out by the lobes of one side only."—*Lancet*, July 8, 1899.

CLINICAL RECORD.

Foreign

CASES OF ABDOMINAL PALPITATIONS

By Sir William Wade, M.D. F.R.C.S.

A lady past middle life had an attack of hæmatemesis to an alarming amount. It recurred twice in the course of four days. The last attack was as follows. In the forenoon she complained of great and painful abdominal pulsation. She then became pale, the pulse frequent, and very small and feeble, and she said she had "a faraway feeling." About six hours after she began to vomit, and brought up a large quantity of blood, a small portion was bright red, the remainder very dark. I came to the conclusion that all except the scanty final portion had been poured out in the forenoon, and that, preceded as it had been by the vehement aortic pulsation, the hæmorrhage was due to an active determination of blood to the stomach. She had not had, nor did she have, any symptoms of ulcer.

I determined to administer nitroglycerine in such quantity and at such intervals as might be necessary to prevent any undue abdominal pulsation, and did so. She had no return of the hæmorrhage though many of frequent pulsation, and she made a slow but good recovery.

I have since seen two other similar cases. In neither did the hæmorrhage recur after the circulation had been controlled by nitroglycerine.

The second case that of a lady past middle life has been under my care within the last few weeks. When I saw her she complained of uneasy and unrestful sleep, a total incapacity to think or to read, or to mix in society because of her inability to enter into conversation. In short she felt perfectly wretched. She also had great and often painful, abdominal pulsation especially about 5 or 6 A.M. Her pulse was quiet and regular though rather small and feeble. She had been in a similar condition about two years ago, and obtaining no relief from treatment, was recommended by her London physician to go into a rest cure, which she did for five weeks, and came out very well. The same thing happened last year and she was again sent to a "rest cure," and remained six weeks, but was not as well as at the end of the previous period. The present attack has lasted about a month. I gave her 1/200 gr. nitroglycerine at bedtime. The first night her sleep was more quiet and restful, and the next morning pulsation very much less In three or four days all her symptoms had disappeared, and she was comfortable bright, and happy. In both these cases the pulse developed under the treatment This principle of treatment is applicable also to many cases of cold feet and hands, this symptom being due not to insufficient action of the heart, as is often supposed, but to contraction of the local arterioles *Brit Med Journ* June 1[illegible] 1899

CASES OF CURE BY PREGNANCY

By Elmer F Vaughan M D, Chicago

In order that the writer may not be understood as contending that pregnancy is a sure and harmless cure for all diseases to which the female flesh is heir, permit him to insist upon the fact that pregnancy is a frequent cause and more often an aggravating complication of many and varied diseases However as there are two sides to all questions, it is to the other or curative side I [illegible] to direct your attention

Pregnancy as a cure acts in at least two distinct ways mechanically, and homœopathically or according to the law of similars Among the diseases cured mechanically, uterine displacement flexions versions and prolapsus tumors, dysmenorrhea, menorrhagia and metrorrhagia Homœopathically, most prominent I regard acne and chronic catarrh of the stomach neurotic indigestion, hysteria [illegible] etc

As illustrations I desire to report the following cases

Case 1 – Mrs H, age 26 one child two years Uterus upon examination found to be size of four months pregnancy filled with fatty growth, which gradually increased menstruation having ceased for six months Growth removed by curettement but returned in about three months Patient was found to be pregnant also Carried the child to term, growth apparently receding after about the fifth month of pregnancy, expelled with, but independent of afterbirth Child healthy, weight ten pounds, now one year old, no return of growth.

Case 2 —Mrs G, age 21, primipara retroflection dysmenorrhea, constipation, with much backache Became pregnant miscarriage at the third month, after which condition remained very much the same Second pregnancy carried to term since which time both the uterus and its functions have been normal bowels regular, backache ceased.

Case 3.--Mrs K, age 25 One child, one year old Coxalgia, unable to rise from sitting posture without excruciating pain, constant pain of greater or less degree, becoming of a sharp, shooting character at times. Under treatment for three months by two physicians, who used both internal and local treatment, including electricity, without relief. Patient became pregnant at about this time, and in a few days all symptoms had disappeared.

Case 4.—Mrs. V., age 40. Two children, youngest fourteen. Symptoms, poor and variable appetite, distress after meals, sour and burning eructations, bloating of stomach and bowels, nausea and vomiting, especially in morning, craving for acids, this condition being present for two years, with very slight and only temporary relief. At this time became pregnant, giving birth to a healthy child of twelve pounds; during period of gestation symptoms mentioned disappeared. Child now ten years of age, health of mother continues good.

Case 5.—Mrs. S., age 27. Hysteria since menstrual function began, married at 25, hysteria continues, becoming even worse; became pregnant at 27, giving birth to a normal child; no hysteria during pregnancy or since, three years later.

Case 6.—Mrs. J., age 35. Ovarian cyst of about six months' growth, about five inches in diameter. Mrs. J. became pregnant at this time, whereupon tumor seemed to increase in size for the first two months, after which the uterus became more prominent and the tumor less. Shortly after birth tumor was entirely absent, so far as any examination would reveal. Four years elapse, no return of the growth.

Case 7.—Mrs. A., age 22, tall, slender, weight 95 pounds. As a child was puny and sickly, hysterical and under-developed; married at 21, at which time cervical glands were enlarged on both sides. State of nutrition poor, menstruation irregular, appetite variable, constipated. Pregnancy occurred one year later, improvement began in less than two months, had little or no nausea, developed rapidly, had an easy labor, marked improvement having taken place. Second pregnancy in about one year similar to the first, leaving the patient in perfect health, weight 130 pounds.

Case 8.—Mrs. D., age 35. Two children, youngest five years. First birth normal, second birth severe, although not a large child; was two days in labor, ending with chloroform and forceps; weak heart, slow and incomplete recovery. Attending physician informed her that she would never give birth to another child and live. Five years later, in a distant city, health continuing poor, she again finds herself pregnant. After seeking relief for her condition upon the grounds of her old family physician's statement, in whom she had great confidence, and being denied such relief, believing it unwise and that the risk would be equally as great, she was finally persuaded to carry her child, suffering, however, nine months of mental agony, caused partly by past experience, but largely by the remark of her physician, she gave birth to a normal child in a normal way, made a good recovery, health being better than for years.

In view of these and other facts, too numerous to mention here, I am led to draw the following conclusions: First, that more suffering is produced by an attempt to avoid pregnancy than by the actual existence of the same. Second, that pregnancy un-interfered with, cures as often as it causes diseased conditions.—*Journal of Orificial Surgery*, June, 1899.

CASES BY DR. MED. THOM, FLEUSBURG.

I. Mr. C., a mason from E., on the island of Alsen, 28 years old, had been suffering for six years from a *lupus exulcerans*, occupying the right cheek from the zygoma to the corner of the mouth. The condition of the patient, a moderately vigorous man, is normal with the exception of a depression of mind, arising from his ailment. C. has used many medicines, both allopathic and homœopathic, since he was taken ill. but without any effect. He received, beginning with April of this year, *Arsen. jodat.*, the 4th dec. trituration, a dose of the size of a coffee-bean, three times a day. By the middle of June the sore had healed up with a relatively fair cicatrix, and there has been so far no sign of a relapse.

II. Miss D., aged 28 years, from the district of Angeln, of full constitution, of florid complexion, prone to congestions to the head, with normal menstruation, has been suffering for about four weeks of pains in the stomach. These are of excessive violence, and caused the patient to give up her occupation in the country and to come to her relatives in Fleusburg. The pains in the stomach are predominantly of a convulsive (spasmodic) nature, sometimes lancinating. They appear especially in the afternoon, and decrease perceptibly when the patient reclines on her back. These pains sometimes appear on an empty stomach, are temporarily alleviated by eating, reappearing later on with all the more violence.

The constitution of the patient, the character of the pain and the *manifest alleviation on reclining on her back*, point to *Belladonna*; its appearance on an empty stomach, the temporary alleviation on eating, with subsequent aggravation, point to *Pulsatilla*. The patient received both of these remedies in alternation in the 3 D. potency of each remedy, three times a day, five drops. After this one consultation I did not hear from her any more. About four weeks later she called on me on account of a bronchial catarrh, and I incidentally heard that the pains in the stomach had disappeared the next day after the consultation.

III. Mrs. P., nearly 50 years of age, a cook on a large farm in Alsen, of a weakly constitution, has not menstruated for three months and consulted me about the middle of May. She was suffering from pains of the stomach, constipation and violent headache. She stated that these ailments had only appeared on the cessation of the menses. The headache is accompanied with a feeling of intense heaviness, so that she can hardly raise her eyelids. But what most distresses the patient is a continually increasing weakness of the sight, so that she can only with difficulty fulfill her duties as cook, and, e. g., *cuts her finger at every occasion*. Starting from the view that her ailment was a consequence of the disturbance in her circulation caused by the sudden cessation of the menstruation and that the disturbance of her vision was due to congestion of the circulation in the back part of the eyes and defective nutrition of the same, and since *Sepia* shows itself of use in many ailments occurring in the climacteric period, I gave the patient of the 4th D. trituration of *Sepia* as much as would lie on the point of a penknife morning and evening. Now and then I interposed a powder of *Sepia*, 4th D. trituration. The headache and the pains in the stomach were soon alleviated, her power of vision gradually improved and her weakness of vision was in about six weeks so far removed that the patient could again resume her functions as cook without any trouble.—Translated from *Leipzig Pop. Zeitschr. of Hom.* for Nov. 1898 in *Homœopathic Recorder*, May 15, 1899.

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A CASE BY DR. ZIPLER OF MANNHEIM.

Dr. Mueller-Kypke reported in this journal (Nos. 15, 16) a case of ailment of the stomach which first imposed as a cancer, but afterwards turned out to be another ailment. I will here report an analogous case, only that in this instance the curious course of the disease at once showed that the diagnosis of cancer was erroneous. The case in brief was as follows:

In the beginning of September Mrs. H. consulted me in my office-hour; she had in the lower abdominal region on the right side a swelling which had now been there for half a year and had steadily increased in size. An allopathic physician had first declared the ailment to be a rupture, then an indurated gland, although the swelling was situated above the inguinal glands in the abdominal wall; he had prescribed various embrocations and hot poultices, but all without effect.

On investigation I found a tumor more than the size of a fist in the lower abdominal wall, where inguinal ruptures are wont to appear. The skin was in some places grown to the tumor, the latter was hard, knotty, it was difficult to distinguish it from the parts in normal condition; it seemed to protrude from the abdominal cavity. An internal examination showed a normal state of the sexual organs and that they had no connection with the swelling. In short it looked very clear that there was a cancer in the abdominal wall, as I had seen it a few years before in a man with whom the tumor was removed by operation. Only the circumstance that the inguinal gland was not swollen, and that I seemed to perceive an obscure fluctuation in the deeper part, caused me not to altogether reject the supposition that a suppurative inflammatory *cancer*, and abscess, was forming. Acting on this thought, I ordered hot poultices of crushed linseed, and gave her internally *Mercur solub* III, three times a day, what would lie on the tip of a knife. The action of *Mercury* in forwarding a suppuration already begun, and to hasten its breaking open was shown here in a most striking manner. After five days the patient came to me with a radiant countenance and reported that the swelling which had become red and hot, had burst open and discharged a large quantity of pus. On examining the scar I found nothing more than a soft swelling as large as a walnut which on pressure discharged some more pus, in three days more the woman was perfectly cured. She could hardly contain her gratification, for she herself had already come to believe that the swelling was of a malignant character.—Translated from *Leipzig Pop. Zeitschr of Hom.* for Nov. 1898 in *Homœopathic Recorder*, May 15 1899

Gleanings from Contemporary Literature.

HOW NOT TO PRESCRIBE.

Horace P. Holmes, M.D., Omaha, Neb.

Our negative experiences often serve for positive instructions. The carefully observed failures of ourselves or our confreres may teach us exactly how to treat cases, just as the rule of *reductio ad absurdum* may be the surest way to demonstrate a proposition.

The writer has learned much from lessons through failures which have been most valuable to him, and in many of them it has seemed that the instructions were more positive than if each of the cases had been brilliant successes. Many of these cases were found in our own lines of practice, others were detailed to us by our brother physicians, and others again come from the pages of our medical journals and text books. A few of them will serve as illustrations and a text.

My attention was called more particularly to the title of this paper as being appropriate for medical discussion, by a humorous editorial which appeared in the October, 1898, number Clinical Reporter, entitled, "We Want a Statue." There was so much hinted at in a negative way by the facetious editor that it has given me many pleasant moments of reflection over the right and wrong way of prescribing, and the various lessons to be learned regarding the action of our homœopathic remedies. Our editor, in the editorial referred to, cited the Schuessler theory, in which that eminent physician claimed disease to be due to a lack of one of the tissue salts, and that the absorption of the one particular salt chosen from his twelve remedies would correct the erring system and restore it to health. The editor of the Clinical Reporter suggested mixing the twelve remedies together and giving this mixture to the patient, feeling certain that nature, in her infinite wisdom, would select the missing tissue salt and save the doctor the trouble. For showing this simple exit from the difficulty our editor asked for a monument to his memory.

There is a world of wisdom in what this proposition does not propose, and may be allowed to perpetrate a bull. To me Schuessler's theory has never been acceptable, although thoroughly convinced of the efficacy of these so-called tissue remedies when applied on homœopathic principles.

In the first place, it is not reasonable to suppose, from the various evidences to the contrary, that these remedies act through being food for the system. There is a genius or spirit in a homœopathic remedy which acts in perfect contradistinction to the drug itself; a something besides the system blindly groping for its particular food to set erring health right and finding it in the tissue salt which we in our finite wisdom apply to the case. Were this so, nature would from day to day select from our various foods and drinks the necessary tissue salt, and all would go well, with never a fear of a failure with disease and suffering to follow. But, with a full supply of these salts, nature fails. And why? "Ay, there's the rub!"

and all our reasonings on the question are but speculations. To me it seems that nature is sick and cannot intelligently make her own selection. She is just as likely to choose the wrong salt and deposit a calculus or start a tumor just where it will do the most harm, as she is to choose the one that will restore the lost function and keep the health at par value. And again, it is not the missing salt she requires, for it will not do the work; but it is the spirit of it freed from everything which goes to make this drug a physical entity. As well try to explain the difference in action between the crude drug and this spirit force as to analyze the difference in sensations between kissing the ruby lips of a pretty girl and a chunk of beef from the slaughter house. But there is a difference (in both cases), and he who does not believe it may some day have the pleasure of demonstrating it. To illustrate how a tissue salt may be supplied regularly and yet fail to do the work where the spirit force will, I will cite a case in point,

About ten years ago I was treating a little girl for a complication of maladies, such as periodical asthma, hay fever, chorea and pericarditis. It was sometime after the pericarditis had been brought under control with Lycopodium 1000th, that the mother said to me, "Doctor, what shall we do with our little daughter to make her stop eating so much salt? She will empty three or four individual salt cellars at each meal if we do not prevent her, and we do not wish to excite her on account of her heart trouble." Instantly I realized that I had failed to note in her case a great many symptoms of Natrum muriaticum, which now appeared to me as plain as the noonday sun. I told the mother to say nothing to the child, to allow her free access to the salt, and I would see what I could do. Prescribing Natrum muriaticum 2000th, I waited two weeks and then asked the mother about the craving for salt. The reply was, "Well, Doctor, it's the queerest thing! We haven't said a word to our little girl about it, but she has stopped eating salt." At the same time there had been a decided improvement in the patient's symptoms.

Now, if Schuessler's theory is correct, how did this patient get the necessary tissue food out of a few doses of the 2000th of Natrum muriaticum when it was not derived from taking several ounces of the crude salt daily? And, returning to the title of this paper, my failure to bring out the picture of that remedy was an illustration of "how not to prescribe." In this line of reasoning, I hope you have followed me to the logical inference to be drawn from the argument, that, to prescribe one of Schuessler's remedies, in any of the potencies, with the view of restoring a patient to health through feeding the system on a missing salt is incorrect, and the principle and practice is an illustration of *how not to prescribe.*

Last July I was called to succeed one of our homœopathic physicians in the treatment of a case of acute inflammatory rheumatism. The patient was a young man eighteen years of age, who had been confined to his bed for seven weeks and was on the day I saw him worse than he had been at any time. On the table stood two tumblers of medicine, which he had been taking in alternation every hour, a box of three-grain tablets salicylate of soda, which he had been taking every three hours and, in addition to this, oil of wintergreen several times a day. Will any one here question me when I say this was an illustration of *how not to prescribe?* I found the patient with his limbs heavily swathed in cotton, a badly swollen shoulder on one side and an elbow on the other, and one ankle swollen and acutely sensitive. The rheumatism had been constantly shifting from one part to another, there was an abnormal sensitiveness to any exposure to air, and the cast of his countenance showed that a harsh word would fill the eyes with tears. In the loudest terms the system was calling for Pulsatilla, which was administered. In this case I forgot the rheumatism and prescribed for the patient, and I have never seen results that appeared more miraculous. The nights which had been so restless became quiet and peaceful, the swelling decreased, the tendency to change localities was modified, each seizure becoming lighter and my patient rapidly recovered. There was a positive aggravation appeared on each change to stormy weather, and this idiosyncrasy was perfectly controlled by Rhus tox. In a month the patient was in charge of an exhibit at the Trans-Mississippi Exposition, and from that time has been entirely free from rheumatism. Just as he was getting about nicely with the aid of a cane, his former physician volunteered the opinion that nothing would ever restore him to health but change of climate; another example of *how not to prescribe.* Some times we say a case looks better in print than it does in practice, but the above is a faithful portrayal of the two pictures.

I do not wish to consume too much time with the rehearsal of other cases to prove the truth of my argument, as I well know that each reader can add countless illustrations; but I would like to speak of a feature which has been a very common illustration, and that is the use of specific remedies and proprietary articles. One of these is a well known "Anti-" of the coal tar derivatives, which greets our eyes in every journal of all schools of practice. It is safe to say it is used in cartloads, and yet I feel that I can conscientiously say in ninety-nine per cent. of the cases the use of this remedy is a perfect illustration of *how not to prescribe.* From a homœopathic standpoint such a remedy cannot be indicated, and in almost every instance the proper remedy will afford more relief to the patient than will any "Anti-" advertised in the land. Its use is attended by failure and disappointment, and the conscientious physician cannot but feel he has been false to his trust, false to his law, false to his patient, and false to himself when he has allowed himself to be led from the true path. Such remedies can not cure, and simple palliation is not the object for which a patient employs a homœopathic physician. However, there are two conditions in which a physician of our school is perfectly justified in resorting to anodynes; first, where the patient asks for temporary relief of a pain without regard to any further curative treatment, as, for instance, to relieve a headache in order that he or she may transact any particular business on hand for the day; second, where the physician is in a helpless tangle as to the indicated remedy and feels that he must relieve his patient even temporarily. While in such cases it is the proper thing to relieve the pain as I believe, yet they constitute too small a percentage of our practice to allow us to use them as weighty evidence against the indicated remedy.

Another illustration, is in certain remedies which are from time to time pushed upon our school with wonderful claim as to their curative virtues. Such an one lately at the front is Echinacea angustifolia. We have seen many cases reported in our journals in which this remedy has seemed to bring out marvelous results, and they are counted as so many victories for Homœopathy. But this is not true. To prescribe Echinacea, or any other remedy on the strength of a newspaper advertisement, or because some physician has succeeded with it is not homœopathic, but eclectic practice, pure and simple, even if thousands of recoveries follow the use of the remedy. Because a homœopathic physician prescribes a remedy is not necessarily a reason for calling it a homœopathic prescription. The writer has prescribed Echinacea several times with failure every time. To him it has been a splendid illustration of *How not to prescribe.* The fault lies in the fact that we are prescribing a supposed specific for a pathological condition on hearsay evidence instead of trying to find the indicated remedy according to the law of similars. I do not wish to antagonize the use of Echinacea *per se* but to emphasize the statement that the use of it, or its *congeners*, on the advertisements of scheming pharmacists is neither good nor satisfactory practice.

Homœopathy is governed by a law which is as true as the rules of mathematics. That does not mean that a homœopathic physician however capable he may be, may not make a mistake. One may be thorough in mathematics and yet fail to solve a problem. One may know how to calculate an eclipse and yet make a trifling error somewhere that will ruin the value of the calculation. It is said that figures will not lie, but I have known many a headache result from trying to make them tell the truth. And so it is with homœopathy. It may be difficult to reach the correct result but that does not affect the truth of the law. No variation from our expected success should make us lose faith in our motto. It will tell the truth if we make it; it will play us false if we are weak enough to let it, but the fault is our own. A failure in results where we have seemed to do our best is not necessarily a failure of the law, but an error in some feature of the work that may afterwards manifest itself. Where we fail ourselves in even trying to follow our law, where we indulge in polypharmacy, where we are led away by pharmaceutical advertisements, or try to take a short cut to success over an unknown road, is a perfect demonstration of "how not to prescribe"—*The Medical Advance*, April & May 1899.

THE "WOURALI" POISON AND ITS USES.

BY DR. EUGENE MURRAY-AARON.

Since the days when that intrepid Amazon, Madam Merian, first called attention to "a poison of great potency, in use by the natives of inner Guiana," speculation as to the exact nature and source of this poison, as well as that of its antidote used by certain of those natives with wonderful skill has been a characteristic of the writings of nearly every naturalist or explorer who has visited the upper Orinoco or north Amazonian watersheds. Yet to this day but little more is known of the subject than in the day when Waterton,* who first brought the substance to Europe, wrote so charmingly of his travels in upper Guiana sixty odd years ago.

From the head waters of the Madeira in Bolivia and the Marañon in Peru, to the south, through the whole upper Amazonian watershed, to the mouths of the Orinoco and Essequibo on the north, the Indian hunters have used a much valued arrow and spear poison of one general character, from before the advent of the first European explorer. This substance, known variously as "Wourali" or "Woorali" (Guiana), "Woorari" or "Woorara" (upper Orinoco), "Urari" (Rio Negro) and "Curare" (Amazonas), differs somewhat in its superficial appearance, because of the varying crudities of the native manufacture, but its principal, perhaps only important, toxic quality is derived from the crystallizable alkaloid, Curarine, which after many unsuccessful attempts on the part of Humboldt, Boussingault, Roulin, Bernard and others the latter succeeded in isolating, and in proving to be possessed in common by all varieties of Wourali.

Prof. Planchon has divided the varieties of Wourali into four principal kinds.† These are (1) That from the upper Amazon of which Strychnos Castelnaeana and probably S. yapurensis are the principal vegetable sources. This is the form known to Bates and Darwin. (2) That from the upper Orinoco, the Cassiquiare and Negro Rivers derived from S. gubleri; this is the sort alluded to by Von Humboldt. (3) From British Guiana and midland Venezuela derived from S. toxifera, S. schomburgkii, and S. cogens, the sort known to Madame Merian and to Waterton, and undoubtedly the most potent of the lot. And (4) that from French Guiana, depending mainly on Strychnos crevauxii for its powers.

While this classification is now known to be somewhat fanciful, rather more botanical and geographic than toxic in its basis, it is the fact, nevertheless, that the Wouralis from the center regions selected for Planchon's classification show marked peculiarities in color, methods of encasing, etc., which make the types of each class easy of distinguishment. But, as with the natives themselves, so with the forms of Wourali, the borderlands where these regions join produce varieties that are true "connecting links," and one may obtain a series of specimens of the crude poison that shows it to be well nigh impossible to strictly maintain such a classification.

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* Charles Waterton, Wanderings in South America. London, 1838.

† Pharmaceutical Journal and Transactions. London, vol, 11, p. 191.

Dr. Horatio C. Wood‡ has offered a classification based on the supposition that the Wourali of the upper Amazon (the No. 1 Planchon) may be distinguished from that of the Orinoco (Planchon's No. 2) by the latter being "full of ants, evidently put in while the poison was liquid." The fact that pounded or bruised ants are used in all of the preparations, sometimes being put in entire and at others only the expressed juices being used, this apparently depending on the whim or the laziness of the native manufacturer, all possible variety in this respect coming from all the known geographical sources of the poison, shows this to be a rather hasty generalization on the part of the usually careful student.

There is little to be added to Waterton's quaint and graphic description of the manner in which the Indian of inner British Guiana manufactures Wourali. It is in this region where still the most potent arrow poison is produced. Says Waterton:

"A day or two before the Macoushi Indian prepares his poison, he goes into the forest in quest of the ingredients. A vine grows in these wilds which is called "Wourali." It is from this that the poison takes its name and it is the principal ingredient. When he has procured enough of this he digs up a root of a very bitter taste and then looks about for two kinds of bulbous plants, which contain a green and glutinous juice. Lastly he ranges up and down till he finds two species of ants. One of them is very large and black and so venomous that its sting produces a fever*; it is most commonly to be met with on the ground. The other is a little red ant which stings like a nettle and generally has its nest under the leaf of a shrub. After obtaining these he has no more need to range the forest.

"A quantity of the strongest Indian [Cayenne] pepper is used, but this he has already planted round his hut. The pounded fangs of the Labarri snake and those of the Counacouchi are likewise added. These he commonly has in store, for when he kills a snake, he generally extracts the fangs and keeps them by him.

"Having thus found the necessary ingredients, he scrapes the Wourali vine and bitter root into thin shavings and puts them into a kind colander made of leaves; this he holds over an earthen pot and pours water on the shavings; the liquor which comes through has the appearance of coffee. When a sufficient quantity has been procured, the shavings are thrown aside. He then bruises the bulbous stalks and squeezes a proportionate quantity of their juice through his hands into a pot. Lastly the snakes' fangs, ants, and pepper are bruised and thrown into it. It is then placed on a slow fire, and as it boils more of the juice of the Wourali is added, according as it may be found necessary and the scum is taken off with a leaf; it remains on the fire until reduced to a thick sirup of a deep brown color. It is poured into a calabash or little pot of Indian manufacture, which is carefully covered and thereafter kept in the most dry part of the hut.

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‡ United States Dispensatory, Philadelphia, 1894.

"The act of preparing the poison is not considered a common one, the savage may shape his bow, fasten the barb on the point of his arrow, and make his other implements of destruction, either lying down in his hammock or in the midst of his family; but if he has to prepare the Wourali poison, many precautions are supposed to be necessary.

"The women and young girls are not allowed to be present, lest the Yabahou or evil spirit, should do them harm. The shed under which it has been boiled is pronounced polluted and abandoned ever after. He who makes the poison must eat nothing that morning and must continue fasting as long as the operation lasts. The operator must take particular care not to expose himself to the vapor which arise from it while on the fire. Though this and other precautions are taken such as frequently washing, the face and hands, still the Indians think that it affects the health and the operator either is or what is more probable supposes himself to be sick for some days after."

It is certain from the foregoing description that Waterton was not taken fully into the confidence of those natives who initiated him into the mysteries of Wourali making. The description of the principal ingredient being the shavings from an unnamed vine proves that they did not disclose to him the necessary use of some plant of the genus Strychnos, which must have been well known to so good a botanist. I say necessary use tentatively, however, as it is far from certain whether without the use of any member of that genus the added ant poisons and snake poisons would not be quite sufficient for all ordinary death dealing purposes, even if not as quickly fatal.

The recent researches which have found "animal strychnine" to be the basis of even the mosquito's virus and the great class of venoms, from that of the dreaded Crotalus adamanteus, the diamond backed rattlesnake, down to that of the gnat, to belong to but one place in the toxic classification, show that unconsciously the savage has been getting his poison supply from a needlessly large range of source while obtaining practically but one life destroying factor.

The Tecuna Indians according to Dr. Jobert use also Cocculus toxiferu and "taya," a species of arum, found to be very poisonous by him. Prof. Kobert states that in the Rio Negro and upper Orinoco districts "guachamaca" Malouetia nitida, enters largely into the Wourali there made. The United States Dispensatory states that guachamacine isolated by Schiffer in 1883, is closely allied to, if not identical with curarine.

The arrow poisons brought from the United States of Colombia by Dr. W. S. W. Ruschenberger and studied by Dr. W. A. Hammond and S. Weir Mitchell,* were probably forms of Wourali, possibly of Planchon's class No. 3. I have procured a very typical Wourali from the Cauca River, a tributary of the Magdalena, in Colombia.

The United States Dispensatory describes the crude Wourali of commerce as a "blackish extract, brittle, somewhat resinoid in appearance, encrusting the sides of gourds or little earthenware jars, into which it has almost certainly been poured in a liquid state." The method of its manufacture, as above described by Waterton, accounts for the pouring in liquid state. A very considerable collection of specimens of Wourali, made by myself, from Bolivia, Peru, Ecuador, Colombia, Brazil, Surinam, Cayenne, and Demerara, shows the color of Wourali to differ from a light brown to an almost inky black and the consistency to run from the brittleness of glass to the flexibility of crude rubber. I have been informed by Herr A. Henricks, formerly resident on the Teffe, a [illegible] tributary of the Amazons, that rubber is added to Wourali by some natives, to give it greater durability and render its cracking from the arrow heads less likely.

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* American Journal of Medical Science, July 1859.

At the Intercolonial Exposition held at Kingston, Jamaica, West Indies, in early 1891 I had the good fortune to become well acquainted with an unusually intelligent half breed from the headwaters of the Essequibo, in Demerara, who claimed to be an adept in the manufacture of Wourali. He assured me that the addition of the bitter roots, the arum, snakes fangs, pounded ants, red pepper, etc., was of no more importance to the mixture than were the incantations and other weird antics of the native when making it. As a proof of what he said he made Wourali for me, from a small amount of the bark and shavings of Strychnos toxifera, procured from the Botanic Garden through the kindness of the assistant island botanist, which on experimentation, I found to have a perfectly satisfactory effect on barbs used to kill the introduced mongoose, Herpestes ichneumon.

This Demerara native also assured me of his knowledge that in the interior of all the Guianas and in Venezuela there were undoubtedly those to be found, here and there, who knew the secret of an antidote to the Wourali. Discussing this with the natives Waterton had come to the conclusion that there was no foundation for the story that such an antidote existed, to which Von Humboldt had in turn given currency. Bates on the Amazons had assured himself of its existence as have several minor travellers. On the Orinoco I had unhoped for proof that this much prized secret existed, and was the source of great power and of a large income, comparatively speaking, in the hands of a few. Its selling price appeared to be as quite ten to one, compared with Wourali as furnishing the unit of value.

And there I made a most interesting discovery with regard to the capture of certain monkeys in the interior uplands. The Indian hunter of all that region far prefers his blowgun to the noisy and heavier fire arms. With a little quiver of perhaps a hundred arrows, made from the midrib of one of the palm leaves, the hard fiber sharpened to a needle point at one end, slightly charred to make it harder, and the butt end tightly wrapped with wild cotton to fit snug in the tube of his blowgun, he has an overabundance of ammunition, for he is an excellent shot, and a good stalker of game, taking few chances and wasting few arrows. His blowgun is the dual product of the swampy plains and the upland streams, the former furnishing the stronger heavier outer bamboo sheath with easily extracted joint pith and the latter the inner tube, a species of reed, which frequently grows to ten or twelve feet between joints, and is, in selected cases, so straight that a plummet line detects no bend nor inequality. This easily carried outfit has two prime advantages, especially in the search for such elusive game as the monkeys: it does not mutilate them, as a charge of shot may do, and its almost silent puff does not frighten away every survivor, as is the case when they take to their heels over the tree tops after the solemn quiet of a tropical forest is shattered by the firing of a gun. If this is true of game wanted for food or for museum uses, it is doubly so of specimens to be sent to market alive. With a knowledge and a quick use of the antidote and the use of arrows not charged with a full strength Wourali, it is possible for the native to temporarily paralyze his intended captive with the first effects of the Wourali and yet, with a prompt use of the antidote, to restore him to activity and to comparative health in a short time. In this way, and only so, can certain species of monkeys be procured alive, for your average monkey is far better able to fathom and escape the mysteries of a native's trap than is the latter able to devise a mechanism capable of deceiving simian inquisitiveness.

As to the composition of this antidote I regret that I have no definite information. All that can be said is that it undoubtedly exists, that common salt is always procured by the natives preparatory to making it (this is quite as likely to be a blind as a genuine need), and that it is used in solution on raw cotton and some drops of it squeezed into the mouth of the poisoned victim and still more into the wound, following which artificial respiration by manipulation of the arms or forelegs, is maintained until consciousness and activity return. It seems to be only possible to procure the antidote already in the cotton. I have heard of no sale of it in the liquid state, nor of any outsider allowed to witness its preparation. Nor would a considerable bribe of nickelled wares and colored two-page pictures from Puck and Judge, prime legal tender in all that region, tempt any adept to the divulgment of this much prized formula.

There is a wide divergence of opinion, however, among the native users of Wourali as to the reliability of the antidote. No one is to be found, apparently, who would exemplify its use on himself, and not a few profess to have discovered that the weakness of the Wourali used in cases, and the artificial respiration maintained, are at the bottom of the recoveries credited to the antidote. I have, however, tried the antidote on wounded birds and small game with fair results, and with the birds I have never attempted artificial respiration. Perhaps two thirds recovered, although all seemed stupid and benumbed for many hours and refused food for several days. That on the other hand artificial respiration has much to be said in its favor, the following accounts given by Waterton prove. Speaking of experiments conducted by himself during one of his vacations in England, he says:

"During that time several experiments were made with the Wourali poison. In London an ass was inoculated with it, and died in twelve minutes. The poison was inserted into the leg of another, round which a bandage had been previously tied a little above the place where the Wourali was introduced. He walked as though all were right. After an hour had elapsed, the bandage was untied, and ten minutes after, death overtook him.

"A she ass received the Wourali poison in the shoulder and died, apparently in ten minutes. An incision was made in her windpipe, and through it the lungs were regularly inflated for two hours with a pair of bellows. The ass held up her head and looked around. But, the inflating being discontinued, she sunk once more in apparent death. The artificial breathing was immediately commenced and continued without intermission for two hours more. This saved the ass from final dissolution. She rose up and walked about; she seemed neither in agitation nor in pain. The wound through which the poison entered healed without difficulty."

In continuation of this account, Waterton says that having been christened 'Wouralia,' this ass was sent to Walton Hall, the country seat of Earl Percy, where for nearly twenty-five years she lived a life of indolence and plenty in recognition of her services in the interest of the science of toxicology.

Another of Waterton's graphic narrations is well worth repeating. He writes of an incident on his first trip inland up the valley of the Essequibo, thus:

"At one of these habitations a small quantity of the Wourali poison was procured. It was in a little gourd. The Indian who had it said that it had killed a number of wild hogs and tigers. Appearances seemed to confirm what he said, for on one side it had been nearly taken out to the bottom at different times, which probably would not have been the case had the first or second trial failed.

"Its strength was proved on a middle-sized dog. He was wounded in the thigh, in order that there might be no possibility of touching a vital spot. In three or four minutes he began to be affected, smelt at every little thing on the ground around him, and looked wistfully at the wounded part. Soon after this he staggered, laid himself down, and never rose more. He barked once, though not as if in pain. His voice was low and weak, and in a second attempt it quite failed him. He now put his head betwixt his forelegs, and, raising it slowly again, he fell over on his side. His eyes immediately became fixed, and though his extremities every now and then shot convulsively, he never showed the least desire to raise up his head. His heart fluttered much from the time he lay down, and at intervals beat very strong; then stopped for a moment or two, and then beat again, and continued faintly beating several minutes after every other part of his body seemed dead. In a quarter of an hour after he had received the poison he was quite motionless."

In all of the foregoing cases it will be observed that everything was done to test the deadly power of the Wourali in the extreme. In the following experiments, made among many others, I sought to test Wourali for its efficiency as an aid to the collecting naturalist; to see, in a word, how quickly it could end life in various orders of vertebrates, if used in the most favorable way. I was especially desirous of finding some poison that would quickly render harmless a poisonous snake, so that it could safely be handled and put in the preserving jar at once; a poison that would take the place of the potassium cyanide needle, because of the extreme danger in handling that death-dealing instrument. I soon discovered, however, that a quality of Wourali of sufficient strength to promptly do the work I desired of it was well nigh as dangerous to mankind as the better known drug, judging from experiments on minor mammals.

There are two features of the use of Wourali that render experimentation with it much less unpleasant than such work is usually apt to be; these are the apparently painless manner in which its victims are killed, and the fact that such experiments can be conducted on animals doomed to death for food purposes, because the introduction of the Wourali poison into them does not affect the edibility of their flesh. Thus the interests of science are advanced while terminating the life of the creature experimented upon in a far more humane manner than is usually the case in our slaughter houses. Commenting on the ease of death by this method, Waterton says:

"The Wourali poison destroys life's action so gently that the victim appears to be in no pain whatever; and probably, were the truth known, it feels none, saving the momentary smart at the time the arrow enters."

A steel-tipped dart coated with full strength Wourali introduced near the base of the brain in a large specimen of our common blacksnake rendered it perfectly motionless in less than two minutes; but a like wound made with half strength Wourali on a snake of somewhat less size only practically benumbed it at last and not greatly weakened its contracting and squirming powers.

Full strength Wourali introduced on a small dart into the base of the tongue of a pigeon killed it in but a little over sixty seconds; the same injection in a pigeon applied in the fatty tissue at the root of the tail took nearly three minutes to produce death. These were simply indicative of the rate of poison distribution through the circulation of the animals experimented on, and are typical of other like trials made on various animals.

Wourali of full strength and in an ample quantity will kill a full grown hog in about four minutes if injected at the root of the tongue; it will take three times that length of time to produce the same effect with an injection in the thigh. This corresponds with like experiments made by Waterton on an ox. A monkey of the blue-faced cebus tribe, wounded in the leg, sought a deep hollow at the juncture of a principal limb with the trunk of the tree on which he was jumping when hit by a heavily charged dart. There he could be seen picking at the wound and slowly rocking to and fro and dubiously shaking his head from side to side in a most distressingly human sort of way. In about a minute and a half his hold on the tree relaxed, he turned on his side and came tumbling to the ground, apparently dead, although a faint fluttering of the heart was afterward discernible. Had he been shot with a load of shot, unless so hit as to kill him instantly and literally knock him out of the tree, his death paroxysms would only have rendered his grip more secure and rigid and the hunter would have simply had a dead monkey high up a tree practically inaccessible to a climber, because of the girth of its trunk and the great height to the first limbs.

Curarine, the toxic principle of Wourali, was strongly recommended to me as a remedy of sovereign power in controlling and lessening the more painful symptoms common to cancer of the vagina, uterus, etc. I was well aware of the ex cathedra verdict of the U. S. Dispensatory, wherein it is said that, "as a remedy curare has very little value; even in tetanus, hydrophobia and other convulsive affections, it will undoubtedly quiet the spasm, but does not have any direct curative influence on the disease."

However, beginning on the basis set down by Du Cazal* that the subcutaneous dose for man is from 1 to 5 centigrammes, exceptionally even 6 to 7, I gave it a most thorough chance to prove its worth under the eyes of skilled and cautious observers, but with absolutely negative results. In the field of therapeutics I believe Wourali to be a negligible quantity. As a remedy to be taken into the stomach, it is a poison whose active principle passes through animal membranes with difficulty; it acts so slowly when thus taken that in many cases it may be eliminated so rapidly as to have but little, if any, marked influence on the patient.

Curarine, unlike most crystallizable alkaloids, contains no oxygen, carbon, hydrogen and nitrogen being its elements. In proposing a provisional formula for it, Preyer offered C[illegible] N as but expressive of its composition. Sachs, believing Preyer's specimens of the alkaloid to be impure, gives C[illegible] H[illegible] N as the correct formula.

Death from Wourali has generally been attributed to paralysis of the respiratory nerves, but [illegible] and Nikolski affirm that the respiratory centers are paralyzed. The latter theory corresponds with my own personal sensation.

Starting with three centigrammes in a moderate subcutaneous (right arm) injection, I slowly worked my way up, allowing at least two weeks to elapse between each trial. Three and even four centigrammes did not produce any very appreciable result, further than to cause some dizziness, slight vertigo, a considerable degree of lassitude and an extremely painful headache of rather unusual duration. But five centigrammes considerably improved upon this, causing a degree of vertigo and lassitude that were most distressing, and six centigrammes, my major injection, gave me one of the frights of my life.

Perhaps I did unwisely in giving myself the largest injection on a day when I was overheated and slightly below par otherwise; however that may be, the added centigramme produced so much more on top of the five centigrammes experiment, that for a time I had reason to fear that that addition was just the amount needed to bring my experiments to a permanent close.

Within three minutes of the time of the injection, the dizziness and vertigo had become so great as to make walking impossible; yet, in another minute the lassitude rapidly creeping over me and the serious disturbance of my breathing apparatus made it apparent that walking, gesticulating, and even an attempt at mild athletics were imperative. My lungs felt glued up, and the muscles of my chest flatly refused to work; everything swam before my eyes, and I was soon reduced to walking up and down the porch of my bungalow, with halting steps, only preventing falling by holding fast to its railing. It seemed to me that I spent hours in that sort of gasping for breath experienced in the Cave of the Winds, Niagara, where water is more abundant in the atmosphere than air. My watch afterward indicated only about twenty minutes of extreme distress, but that twenty minutes was one never to be forgotten, and I advise all experimenters, however robust or valiant, to remain below the five centigramme limit.

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* Archives Generales, September 1869.

As a fitting close to this article let me quote the description of a Macoushi Indian who had seen his comrade accidentally go beyond my limit, with fatal effect. The two had been out after tapir meat together, and the doomed man had taken a long-chance shot at a monkey in the treetops. The dart had missed its elusive target and gone out of sight; evidently on its return to earth it had struck a limb and been deflected in its course, for suddenly the hunter was aware of its presence in his quivering arm.

To translate the Indian's brief narrative without detracting from its style, he may be quoted thus:

"Quacca take the dart out—never a word. Puts it in quiver and throw it in river. Gives me his blowpipe for his little son. Says to me goodby for his wife and the village. Then he lays down, for he is very faint. His legs will not walk, his tongue talks no longer, no sight in his eyes. He folds his arms, he rolls slowly over; his mouth moves without sound. I feel his heart, it goes fast and then slow. It stops. Quacca has shot the last Wourali dart."—*Scientific American Supplement*, June 17.

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ALTERNATION OF MEDICINES.

In the *Hahnemannian Monthly* for June, Dr. Dudgeon has conclusively shown "that Hahnemann regarded the alternate administration of two or more remedies in acute and chronic diseases as occasionally allowable, and even advisable."

Dr. Clarke inserted the whole of this article in his Journal, the *Homœopathic World*, for July. Fearing it might have the effect of encouraging too indiscriminate and too hasty adoption of the practice, he has, in the August number, given his own views on the subject in a short article. We are in perfect accord with the talented author in the opinion therein expressed, and we therefore give the following extracts from it:

"Dr. Dudgeon, with his usual force and clearness, puts the *historical* aspect of the question in such a light that little more need be said about it. The only thing that remains to be settled is the wisdom or otherwise of the practice itself.

"And, after all, that is the only thing that need give us any concern. We have no sympathy with idolatry of any kind, be the idol man or book. HAHNEMANN is great because the principles he established and fought for are true: some people are apt to think that homœopathy is true because HAHNEMANN preached it and wrote of it in the *Organon*. Therefore, though it is interesting from an historical point of view to know whether HAHNEMANN ever practised or sanctioned the alternation of remedies, it is to us vastly more important to know how far it is possible to follow the practice with benefit to our patients and advantage to our own development in therapeutic power.

"Once again we must utter a warning against being led astray by a word. There is alternation and alternation. It is one thing for a master to alternate remedies when he knows accurately their powers and how they are related the one to the other; and it is quite another thing for a humdrum homœopath to alternate two or three remedies because he does not know just what any one of them is capable of doing. The practitioner who is content with this kind of practice, who *habitually alternates* on the strength of a smattering of knowledge, picked up from elementary text-books, and who scorns to consult a repertory or a materia medica has set the limits to his own progress and will never know a single drug as he ought to know it, or understand the therapeutic power that homœopathy contains for those who are ready to dig its treasures out.

"Alternation in the latter sense is altogether different from the occasional interpolation of a dose of *Carbo Veg.* when a course of *Lycopodium* is being given, because *Carbo* intensifies the curative power of *Lyc.*; or the interpellation of a dose of *Sulphur* when an indicated remedy appears to be losing its effect, and when *Sulphur* has a relation to the case. The question of the relations between remedies is a most important one and as yet but slightly worked out. There is here a large field open for the investigation of able and ardent homœopaths, but the routine alternationists will never make any discoveries in it. It is only those who know each remedy in its individuality who can find out in what way it is related to other individualities of the materia medica."

It is not a little singular that it is generally novices in homœopathy who resort to frequent repetition and alternation of remedies more often than their older colleagues, and that they give up both these practices as they grow older themselves, that is, as their knowledge of the natural courses of diseases and of the actions of drugs increases in precision. Sometimes, however, the habit of repetition and alternation leads to so much confusion of knowledge that the benefits of experience are lost, and the habit becomes too rooted to be eradicated, with the result that seldom a true homœopathic cure is effected by practitioners who too frequently repeat medicines and alternate them as frequently. This habit is an index of want of confidence in any medicine, of laziness and of its twin brother impatience.

SLEEP AND SLEEP-PRODUCING REMEDIES.

III.

(Continued from p. 269 of last number).

It will be seen that of the chemical theories of sleep, of which some idea has been given in the last article, that of Sommer, though based upon a fact of the actual greater consumption of oxygen during the day, does not help in explaining why such impoverishment of oxygen in the system should lead to the condition which is known as sleep; that of Pflüger, as we have already said, is purely hypothetical, there being no reason to believe that the combination of the intra-molecular oxygen with the intra-molecular carbon is of the nature of an explosion; that of Preyer, though based upon his own experiments of the hypnotic properties of lactic acid which is a waste product of the metabolism of the cerebral tissues, has not been confirmed by other experimenters; and lastly that of Bouchard and that of Errera, are yet in the region of unverified hypotheses.

It would certainly be very interesting if sleep could be shown to be a sort of auto-intoxication by some waste products of the system having properties of the nature of hypnotics, such as morphine, chloral hydrate, &c. But even then the ultimate nature of sleep would remain unexplained. And the question would arise what are the character and composition of the hypnotic substance or substances generated within the body during its waking hours or normal functionings? Is it one substance or are there more than one? Has each organ its own hypnotic, or is there only one hypnotic substance which exercises a common sedative influence on all, that is, on the whole system? These are problems which must be solved before the chemical theory can be pronounced to be established.

But even when thus established it is necessary that we should have a clear idea of the nature and character of the changes which the hypnotic or hypnotics bring about in the various tissues of the body. It must be obvious that a solution of this problem is only possible when studied in connection with the action of the hypnotics which we can artificially produce. In other words we must look to experimental pharmacology for some help in this direction. For the successful carrying on of pharmacological experiments with reference to sleep an intimate knowledge of the nervous system, especially of the brain, is essential. The connection with one another of its various parts, and the minute structure and connections of the two constitutive elements of all nervous tissue, cells and fibres, must be known, before it will be possible for us to interpret the phenomena which will result as consequences of our experiments.

Notwithstanding the strenuous endeavours that have been made in unravelling the mysteries of the nervous system, notwithstanding the many striking discoveries that have already been made by improved methods of investigation, much, indeed, very much yet remains to be done in both histology and physiology. The relative functions of cell and fibre have been so far established that the former has been demonstrated to be the source or originator of nervous influence or power and the latter to be only its conductor, but what the nature of that influence or power is, remains quite a mystery. Generally, that influence has been looked upon as akin or analogous to electricity, and in this view the nerve-cell would be analogous to a voltaic cell, and the nerve-fibre to a conducting wire.

Professor Oberstein, of Vienna, seems to entertain a different view. According to him, "the cells are the stations; the fibres the railroads which connect the stations together." His exposition of the anatomy and the physiology of the central nervous system is based upon this analogy. "The term TRACT," he says, "is used to signify the connecting road between two central grey masses, or between a grey mass and an end-organ. We have almost always, however, to do with a more or less complicated combination of roads, bringing stations of several different distances apart into functional relation with one another. Hence, for example, we may speak of a cortico-muscular tract, meaning thereby the whole group of nerve-fibres (perhaps interrupted at more than one point by the intercalation of grey masses,) along which an impulse starting in the cortex must travel, if it is to induce a movement in a certain muscle. In the same way we speak in common life of the Berlin and Vienna Railway, although we know quite well that Dresden and Prague lie between the two termini."

Prof. Oberstein in pursuing the comparison further says: "The route just mentioned is by no means the only connection between Berlin and Vienna; not only can we take the line through Breslau and Oderberg, avoiding Dresden and Prague, but various alternative routes from Berlin to Dresden, or from Prague to Vienna, are offered to us; further, we are in a position to go direct from Dresden to Vienna without touching at Prague, and so forth. When, for example, it happens that owing to a landslip the line between Dresden and Prague is impassable, the connection between Berlin and Vienna is not thereby interrupted. The richer the net work of rails, the more numerous are the connections, the 'tracts' between the two chief termini." "Another lesson may be learnt from the railroad illustration. Supposing the line between Dresden and Prague is interrupted, I can still, if I chose, adopt a method, somewht slower, perhaps, of travelling from the one place to the other—I can drive. So, too, in the central nervous system, when one track is interrupted, other collateral routes are still at our command. It would be quite wrong to conclude that, because a function is still performed after certain fibres are destroyed, these fibres having nothing to do with the conduction of the said impulses."

This analogy however seems to us rather to be too gross. Is there any actual transfer of material from one station to another, or to a terminal one, as in the case of the railway system, and of the blood or lymph circulatory system? We do not think there is, and we are, therefore, of opinion that the electric analogy, though not exact, is more approximately so. The impressions made upon the ends of the peripheral nerves, which are conveyed by them to the nerve-centres as sensory impressions, are more of the character of waves or vibrations than of actual material particles. Similarly the influences conveyed from the nerve-centres to muscles whereby their contractions are effected, are not of the nature of material particles, but rather of a rapid succession of tremors or vibrations.

How these tremors or vibrations transmitted to certain parts of the brain are converted into sensations, in other words, into consciousness of their existence, has not been shown, and it is questionable whether the demonstration will ever be made. The gulf between a physical state and the corresponding psychic state is apparently so wide and deep, that there does not seem to be any possibility of its being bridged over. Dr. Charles A. Mercier has well said in his article on Consciousness in Tuke's *Dictionary of Psychological Medicine*: "There is a universe of matter around us and a universe of mind within. The events of the one are to some extent mirrored in the other, but their nature and composition are totally different and cannot be reduced to common terms. The one consists of particles and movements, the other of feelings and thoughts, and we can no more think of mind and matter in convertible terms than we can imagine a particle of iron to become transformed into a feeling of anger, or the revolution of a wheel to become the remembrance of the date of a battle." Even the late Prof. Tyndall had to admit that "the passage from the physics of the brain to the corresponding facts of consciousness is unthinkable," and that "granted that a definite thought and that a definite molecular action in the brain occur simultaneously, we do not possess the intellectual organ, nor apparently any rudiment of the organ, which would enable us to pass, by a process of reasoning, from one to the other."

It is true that the gulf between matter and mind is impassable by any process of reasoning. But nature has not only bridged it; she has associated two apparently incompatible things most intimately. There is no escaping the fact that in the present state of our existence every subjective state has an objective basis in the physical world. Dr. Mercier believes that, "not only is every phase of consciousness the shadow of some condition of the superior nerve regions, but it is at the same time the mirrored representation of some condition in the world outside of us;" but that, "while it is as certain as anything in this obscure region of knowledge can be, that no mutual action of consciousness and nerve action on one another is possible or is conceivable, it appears equally certain that consciousness does not exist apart from nerve action, but that only while nerve action of some kind is going on does consciousness come into existence, and, according as the nerve action varies, so do variations take place in the conscious accompaniment."

The mutual action of consciousness and nerve action may be inconceivable, but it is not only not impossible but it is what is taking place every moment of our lives, and the intimate correspondence between the two being admitted, it is, we think, scarcely logical to believe in the impossibility. We would go further and say that the correspondence between molecular change (from metabolism) in definite areas of the brain, it may be of single cells, and definite psychic states, being so regular as that one invariably precedes the other, that it is almost impossible to resist the conclusion that the antecedent molecular action is, if not the cause, at least the necessary condition of the corresponding psychic state.

The ground being so far cleared, the next most important step for our present purpose is the ascertainment of the seat of consciousness. Sleep is the repose of the whole system, but more especially of the parts concerned in consciousness. Roughly speaking the brain is the organ of the mind, but it is not the whole brain which is the seat of the mind. The actual seat of the mind is only that part of the brain where the phenomena of consciousness occur. For a long time the seat of consciousness was supposed to be in the ganglia at the base of the brain, but recent research has removed it to the cortex of the hemispheres.

A knowledge of the structure of the cortex, therefore, is of importance for the understanding of the action of hypnotics, that is, for the discovery of the cause of sleep from the side of pharmacology. Viewed with the naked eye in a vertical or rather perpendicular section the cortex is found to consist of no less than six layers, which from the surface inwards are as follows, taken from the latest edition of Quain: 1. A thin coating of white matter on the surface which appears as a white line bounding the grey surface internally. 2. Immediately beneath this is a layer of grey or reddish grey matter. 3. Beneath this again there is a thin whitish line (line of Vicq d'Azir, outer line of Bailliarger). 4. A second stratum of grey matter. 5. A second thin whitish layer (inner line of Baillerger). 6. Deepest of all is a yellowish greyish layer which lies next to the central white matter of the convolution.

The cortex, the thickness of which varies only from 2 to 4.2 millimeters, that is, from .079 to .158 of an inch, displays under the microscope a most wonderful structure. Very nearly corresponding with the layers observed with the naked eye we have the following layers of cells and fibres imbedded in a molecular matrix: (1) The outermost or the most superficial layer is very narrow, about 1-10th of the whole thickness of the cortex. It consists of neuroglia (chiefly), a few nerve-cells, and a few medullated fibres which traverse it in a horizontal direction. (2) Layer of small pyramids, of nearly the same thickness as the last (.25 to .75 mm), consisting of close-set, small, angular or short pyramidal nerve-cells from which processes come off and ramify in the molecular ground substance of the cortex. (3) Layer of large pyramidal cells is the thickest layer (.4 to 1mm), and consists of many layers of large pyramidal cells which are connected by their axis-cylinder processes to white nerve-fibres. (4) This, a narrow layer from .35 to .15 mm, consists of numerous small, branched, irregular ganglionic-cells, disposed in groups and divided into vertical columns by white nerve-fibres from the central white matter to the cortex. There are also in this layer horizontal fine medullated fibres. (5) The fifth layer or the layer of fusiform cells (.1 mm), is next to the central white matter and is scarcely sharply defined from it, except by the existence in it of scattered spindle-shaped fusiform branched cells. It also is broken up into vertical columns like the preceding layer by white fibres proceeding from the central white matter to the cortex.

The above description applies to a section of the cortex of a motor area as of the ascending frontal convolution. The whole cortex in these motor areas is very thick and the large pyramidal cells, which resemble the cells of the anterior cornu of the grey matter of the spinal cord, are so large as 50μ to 110μ. It should also be observed that none of the layers above described are composed exclusively of one form of cell.

The cortex of the occipital lobe presents what is called the sensory type, of which the two first layers are like those of the motor type, but the third layer is not so thick and the pyramidal cells are smaller. In this layer the horizontal medullated fibres are more numerous. It is remarkable that in the frontal non-motor region the third layer is thinner as in the occipital sensory area.

Though the brain has been divided into lobes and the lobes into regions, motor and sensory, it must not be supposed that the transition from one region to another, or even from one lobe to another is abrupt. The transition is very gradual indeed.

(To be continued.)

PLAGUE IN CALCUTTA.*

BY DR. HEM CHANDRA RAY CHAUDHURI, L.M.S.

CAUSE.

All authorities agree in ascribing plague to *defective hygiene.* The insanitary condition of houses, where an outbreak has taken place, is most remarkable. In the Calcutta bustees, in the most affected of all the houses, insanitary condition was particularly observed. The wards 5, 6, 7, 8, 9, 13, 14, 22 and 23 showed high mortality from the disease, and they are the filthiest in Calcutta. There were, however, houses apparently clean where plague has not made its ravages. This is just as in other diseases caused by filth. A particular germ is wanted to sow the seeds of the disease and disseminate it by propagation. Nothing living can arise *de novo,* is what has been established in these days of scientific research.

The institution of a comparison of Bombay with Calcutta with regard to filthiness is not easy. Major Cleghorn condemns the chawls in unmeasured terms. The five sanitary officers appointed by the Medical Board of Bengal in October 1896, passed a similar condemnation of the bustees of Calcutta. Dr. Cleghorn, however, wondered that the mortality under such conditions has been so small. The Bombay chawls are not generally more than four or five stories, the Calcutta godowns are not more than two or three. Mandvie of Bombay is comparable to Bara Bazar of Calcutta.

The influence of *climate* on the causation of plague and its character is another difficult point to settle. Scheube thinks moderate warmth in conjunction with dampness is the most favourable condition for its development. It is true that in Egypt and Mesopotamia these conditions were observed to favor the out-break of the disease, but the severe winter of Moscow and Astrakhan could not prevent its invasion. In China, the experience of Staff Surgeon Wilm corroborated that of Scheube.

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* Extracts from a Paper read before the Hahnemann Society on the 6th instant.

Bombay recorded the same experience. The disease appeared after the autumn rains, that is, in warm damp weather. The epidemic reached its height in winter and then gradually declined towards the end of June, to appear again with severity after the rains. The same experience is noted in other places of the Bombay Presidency.

Calcutta has not followed that rule. Plague began in April 1897, and all conjecture of its increase in the cold season proved false. The disease did not increase after the rains or in winter.

In Bombay the maximum temperature seldom exceeds 96° F. and the minimum does not fall below 63° F. in any year. In Calcutta the maximum is 104°F. or above. The minimum is 47°F. or under. The variation in Bombay is limited within 33 degrees. Whereas in Calcutta the range is 57. Calcutta in this respect ought to favor the development of diseases more than Bombay. But as regards plague the experience has been reversed. Bombay, with its pleasant sea breeze, ought to exert a more favourable influence in warding off attacks of any disease. Calcutta, situated on a low marshy land and surrounded by marshes, is likely to favour the development of all diseases. But as regards plague the influence has been otherwise. There is more rain in Calcutta than in Bombay.

The geological formations of Calcutta and of Bombay are an interesting study. Bombay is situated at 18°55′ latitude and 72°54′ longitude. Calcutta rests in 22° 34′ latitude and 88°24′ longitude. The difference in latitude is about 4 degrees. Bombay is situated on a basaltic rock interposed with ash. The beds of ash are more common in the upper part of the series pointing to old volcanic foci. The traps have an inclination of 5° to 10° in the islands of Bombay and Salsette. They are "separated from each other and from the mainland to the north by tidal creeks and alluvial flats, while the expanse of water forming Bombay harbour lies between them and the mainland to the eastward. In the islands of the harbour, and on the hills between Thana and Kalyan north of the harbour the same westwardly dip is displayed." The Indo-Gangetic alluvium on which Calcutta rests extends from Assam to the Punjab and reaches as far as the Gulf of Cambay. The extension is broken by the Sahayadri range or the Western Ghats which run from the river Tapti to Cape Comorin. "Alluvial plains, evidently of comparatively recent formation, connect the hills of Bombay and Salsette island, a few creeks alone remaining to show the position of the marine channels which formerly existed. Farther north these plains gradually increase in extent until they merge into the alluvial flat of Gujerat."

" At Bombay the alluvial deposits consist of blue and yellowish brown clay. The former varies in thickness from a few inches to several feet, its upper surface being at present about one or two feet below high water level. It is very salt, and contains small grains and nodules of kankar and occasionally plates of gypsum; it is frequently penetrated by mangrove roots, which are usually riddled by *Teredo* borings, just as in the mud of tidal creeks, and at one spot large masses of oyster shells have been found in it. The yellowish brown clay appears to be the older of the two deposits. Its surface is frequently above the sea level, it abounds in large masses of kankar and it has occasionally yielded estuarine shells, *Placuna, Ostrea,* etc. That these alluvial deposits are estuarine, and precisely similar to the mud now deposited in the creeks and back waters of the coast or on the shores of Bombay harbour, is shown by the similarity of mineral character and by the organic remains, both vegetable and animal found in the clay."

These littoral accumulations are marine and not estuarine. The beds may have been originally sandy but have consolidated by the cementing action of carbonate of lime after being raised. There is a trifling rise at Bombay. These facts clearly point to the recent formation of a shallow bed of clay on the hard consolidated formation. These are placed on an impervious stratum of basalt. Any organic matter, if not completely washed away, would remain on the surface, to be acted upon by the advent of new micro-organisms. This is a fertile field for sowing seeds of new diseases in.

The Committee of the Bore Operations in Fort William reported thus in 1840 :—

"After penetrating through the surface soil to a depth of ten feet, a stratum of stiff blue clay, fifteen feet in thickness, was met with. Underlying this was a light coloured sandy clay which became gradually darker in colour from the admixture of vegetable matter, till it passed into a bed of peat, at a distance of about thirty feet from the surface. Beds of clay and variegated sand intermixed with kankar, mica, and small pebbles, alternated to a depth of 120 feet, when the sand became loose and semi-fluid in its texture. At 152 feet quick sand became darker in colour and coarser in grain, intermixed with red water-worn nodules of hydrated oxide of iron, resembling to a certain extent the laterite of South India. At 159 feet a stiff clay with yellow veins occurred, altering at 163 feet remarkably in colour and substance, and becoming dark, friable, and apparently containing much vegetable and ferruginous matter. A fine sand succeeded at 170 feet, and gradually became coarser and mixed with fragments of quartz and felspar to a depth of 180 feet. At 196 feet clay impregnated with iron was passed through, and at 221 feet sand recurred, containing fragments of lime stone with nodules of kankar and pieces of quartz and felspar; the same stratum continued to 340 feet, and at 350 feet a fossil bone, conjectured to be the humerus of a dog was extracted. At 360 feet a piece of supposed tortoise shell was found, and subsequently several pieces of the same substance was obtained. At 372 feet another fossil bone was discovered, but it could not be identified, from its being torn and broken by the borer. At 392 feet a few pieces of fine coal, such as are found in the beds of mountain streams, with some fragments of decayed wood, were picked out of the sand, and at 400 feet a piece of lime stone was brought up. From 400 to 481 feet fine sand, like that of the sea shore, intermixed largely with shingle composed of fragments, of primary rocks, quartz, felspar, mica, slate, and lime stone prevailed, and in this stratum the bore has been terminated."

It will be seen from the above that the soil of Calcutta down to a depth of 481 feet is composed of layers which are all pervious to water. Hence organic matter, the result of decomposition by heat and moisture, is liable to be carried down to that depth and washed away by subsoil water.

An enquiry into the cause of plague leads us to the consideration of the theory of its origin from marsh miasm. Here we are confronted by facts which negative the supposition. Dr. Cabiadis refuted the idea by the fact of the immunity from plague enjoyed by Bussorah and Kerbela, the dampest cities in Mesopotamia surrounded by marshes. The cases in Kerbela were due to the attacked coming from other cities to die in this holy place. My friend Dr. Jelovitz also holds the same opinion.

Other instances may be cited of immunity from plague of cities such as Faridpore, Jessore, Burdwan, etc., which are notorious for being deadly malarial. Calcutta compared to Bombay is a worse place from that point of view. The small number of seizures and of deaths in Calcutta in comparison with those of Bombay disproves the theory.

Kumaon and Gharwal, situated at an elevation of 7000 to 8000 feet above the level of the sea and over the Himalayan plateau, have been known to be the endemic homes of the disease from 1823 or before. The external range is from 7000 to 8000 feet high, while the internal range rises to a height of 10,000 to 11,000. The principal foci for the spread of infection, Kedarnath and Badrinath, have a height of 22,832 feet. The Himalayan terais, notorious for malarial marshes, are free from the disease.

Is plague an outcome of sewer gas? This hypothesis has been advanced by some people of Bombay who believe that the underground drainage system produces all forms of disease and among them plague also. But they should take into account the cities of Mesopotamia with open drainage and Kumaon and Gharwal with no obstruction to drainage, being situated so high.

My observation of facts connected with the Calcutta sewers has convinced me that drainage has little to do with the spread of plague. Those who advance the theory should prove that plague organisms can flourish in sulphuretted hydrogen, the principal emanation of sewers. But the fact is otherwise. The sewer in Sankaritola Lane, in Ward xi, was for a long time in a bad state. When the 6 inch pipes were changed for those of one foot, three almost entirely obstructed pipes penetrated by roots of trees were discovered. They happened to be placed nearly at the summit of that lane, and therefore little obstruction to the flow of water was met with. But the drainage flow of that lane, inhabited by many fishermen and containing many bustees, was imperfect on account of partial sinkings. Both before and after the laying of the new pipes not a single case of plague occurred in that lane. The same thing may be said of other streets.

The accumulation of refuse in streets and especially in narrow lanes may produce some amount of danger but the underground drainage and the escape of sewer gas have no influence on the dissemination of plague poison.

Dr. Manson, in his translation of M. Rocher's "Notes on the Plague in Yunnan," has emphasized the novel theory put forth by the author who says:—"There is a fact that inclines one to think that the epidemic is owing to exhalations from the soil, and it is this: those animals that live in the ground, in drains, or in holes, are the first to be attacked. This is particularly noticeable with the rats. As soon as these animals are ill, they leave their holes in troops, and after staggering about and falling over each other, drop down dead; more frequently they die under the floor, filling the apartments with foul odours, of which the source is not discovered at once. The same phenomenon occurs in the case of other animals, great and small, such as buffaloes, oxen, sheep and deer, and sometimes also court yard fowl, but among these the disease is not very fatal. On our arrival in the province, we refused to believe these stories, setting them down to superstitious imaginations of the people; but when the malady broke out during our stay we had the opportunity of convincing ourselves of their veracity."

The symptoms described by M. Rocher are nothing but restlessness which prevents the rats from remaining within their holes. Probably the migration is not due to any emanation from the soil. It is not unusual to find dead rats within a hole when plague has occurred. I know of such occurrences at 9 Serpentine Lane, in Ward xi. But it may be said that the poison was so strong that the rats were unable to leave their holes before death. Moles are rarely attacked. Further, the death of rats is not always a precursor of the human attacks. Without arguing on groundless hypothesis, the disease of the rats may be traced to other sources. Another noticeable fact in the above statement is that fowls are attacked with plague but the disease is not very fatal with them. The birds as a rule are naturally immune to many diseases which human flesh is heir to. Hydrophobia has no place with them. The disease remains latent never to manifest itself.

PERIOD OF INCUBATION.

The period of incubation is another uncertain point to deal with. Yersin gives the period at four to six days. According to Scheube, it is from two to seven days, and exceptionally may extend to fifteen days. In virulent epidemics it shortens to a few hours. Wilm from his observation of Hongkong epidemics of 1894 and 1896, showed that the period might extend to nine days, but was usually three to six days. He cites a case in the jail in which the period extended to fifteen days. Dr. L. Petresco, the Roumanian Medical Commissioner sent to the Astrakhan Plague of 1878 and 1879, was of opinion that the incubation did not go beyond the 7th day. In most of the cases the duration was only 2 to 3 hours. In the segregation camps of Poona the time was confined within 3 days. In Calcutta according to my experience the period did not exceed 6 or 7 days. Generally it was within 24 hours. In one case in a family in my neighborhood it was twenty-one days. This family had gone to a city near Hyderabad, Deccan, an infected place. Twenty-one days after its return to Calcutta, a girl of six years developed symptoms like those of plague, of which she died She could have brought the germs of plague only from Hyderabad. There was apparently no chance of her catching the disease at Calcutta. The Venice Sanitary Convention of March 1897 rules a period of ten days as the practical basis for preventive measures.

SYMPTOMS OF PLAGUE.

Plague has a character of its own. The sudden attack, intense thirst, headache, redness of eyes (ocular conjunctiva), fever, nausea, vomiting, great prostration, irritability or dulness, unusual languor or suddenness of action, tottering gait when walking like that of a drunkard, dulness of hearing, sunken eyes, thickness of speech, and sleeplessness are the principal symptoms observed in the beginning. Then the disease assumes a definite type which is either bubonic, septicæmic, or pneumonic. Dr. Bitter, of the Egyptian Plague Commission, recognises these three varieties. The other varieties that have been described would, on a careful consideration, be found to merge in either of these.

General Gatacre in his report on the Bombay Plague has divided the disease thus :—

1. With enlarged glands.	Femoral Inguinal Axillary Cervical Tonsilar.
2. Without enlarged glands.	Septicæmic Pneumonic Mesenteric, enteric or gastro-intestinal Nephritic Cerebral.

Of the first division, the distinctions made are superfluous, of the second mesenteric or gastro-intestinal has no importance by itself.. The cases without enlarged glands come under the septicæmic variety. The cases with enlarged mesentric glands come under the glandular variety. Nephritic and cerebral are concomitants of one of the three. They have no separate existence dissociated from the three principal varieties.

The bubonic type is the largest representative in the whole course of an epidemic of plague. The septicæmic cases are found to be in greater number than the bubonic at the commencement. The pneumonic occur according to the nature of the season, being more prevalent in the rains and in winter.

The symptoms of the bubonic variety are characterised by enlarged glands and by less severity of the nervous and head symptoms than the septicæmic. The septicæmic type is known by the predominance of the nervous and head symptoms. The pneumonic is well known by its attack of the lungs. Glandular enlargements in septicæmic cases are not common. In the pneumonic, it is almost absent.

Cases with sudden glandular enlargement without fever but attended with great prostration are seen at the very beginning or at the end of epidemics. Cases with suppuration of glands are observed more at the end than in the beginning of an epidemic.

(To be continued).

EDITOR'S NOTES.

Galactocele in the Male.

Kirmisson (*Progrès Médical*, July 15, 1899) was consulted by a boy, aged 14, who had a fluctuating tumour in the left breast. It developed after a blow received at football, and a blood cyst was suspected. On puncture a white liquid escaped, and proved on examination to be milk. The cyst was thus a true galactocele.—*Brit. Med. Journ.*, Aug. 5, 1899.

Four Cases of Monstrosity in the same Family.

Héstle (*Vírginia Med. Semi-Monthly*, June 23rd, 1899) narrates the extraordinary history of a mulatto woman, well formed and healthy, as was also her husband, who gave birth to four male infants (the results of the first, fourth, fifth, and sixth pregnancies) in all of whom the hands and feet were attached immediately to the body (phocomelous?), and all wanting the external ear. Her female infants were normal, and are still alive. There was a maternal impression (fright from an opossum) in each of the pregnancies which ended in the birth of a monstrosity.—*Brit. Med. Journ.*, Aug. 12, 1899.

Entozoa in the Uterus.

E. M. Simons (*Centralbl. f. Gynak.*, No. 26, July 1st, 1899) noticed in examining a woman, aged 42½, and suffering from rupture of the perineum and tear of the cervix, that the secretion from the uterus had a peculiar aromatic odour, and that the erosion had a very pale livid colour. On the vaginal portion was seen an oxyuris vermicularis, about 1½ cm. in length, and from the cervical canal another smaller one was extracted. There was neither vulvitis nor colpitis in this case, but possibly the endometritis which existed might be ascribed to the parasite. The patient had long suffered from rectal irritation.—*Brit. Med. Journ.*, Aug. 5, 1899.

Malposition of Left Kidney and Uterus Unicornis.

Frank (*Centralbl. f. Gynäk.*, No. 20, p. 596, May 20th, 1899) records the case of a woman, aged 30, who had had eight normal confinements. She had for three years suffered from pain in the lower part of the abdomen, especially on the left side, very marked on locomotion and during coitus. The uterus was found retroverted, and to the right, and could not quite be replaced; while to the left side and in front of the sacro iliac joint was a resistant lobulated tumour larger than the fist. Laparotomy was performed, when it was discovered that the left sided tumour was the kidney displaced and rotated so that its concave border was directed upwards and outwards. The peritoneum over it was divided, the organ was rotated into its normal relation to the axis, and drawn up to a higher level in the abdomen where it was fixed with sutures. The left tube, ovary, broad and round ligaments were wanting. The uterus unicornis was anteflexed, and fixed to the anterior abdominal wall. Recovery was complete.—*Brit. Med. Journ*, Aug. 5, 1899.

Wound of the Heart.

J. O. Rush (*Therapeutic Gazette*, July 15th) says that on August 11th, 1897, he was hurriedly called to see a coloured man, 45 years old, 6ft. high, and weighing about 185 lbs., who had been stabbed some thirty or forty minutes before his arrival. At every heart beat there gushed from a small wound directly below the left nipple, between the fifth and sixth ribs, a wave of blood. There was another wound, 10 inches long, extending from the angle of the eleventh rib downward and forward towards the linea alba, and through the external oblique and transversalis muscles. On passing the index finger into the small wound lying over the heart, a cut could be distinctly felt in the wall of this viscus, apparently entering the right ventricle. The external bleeding was checked, and the patient was stimulated with strychnine and nitroglycerine hypodermically. While the long wound was being sutured the patient regained consciousness; he called him by name, and gave an intelligent account of the conditions which led up to the assault made upon him. He lived for about two and a-half hours after receiving his wound. The necropsy showed that the diagnosis as to the position of the heart wound was correct, and that it was large enough to admit the little finger.—*Brit. Med. Journ.*, August 12, 1899.

Congenital Hour-Glass Stomach.

Sievers (*Berl. klin. Woch.*, April 10th, 1899) relates an interesting case in a woman, aged 38, who died from suppurative peritonitis due to a perforated gastric ulcer. At the necropsy the stomach was found to be divided into two almost equal parts. There was a tube-like communication between the two halves 2 cm. long and 2½ cm. broad. The lumen of this tube was so small that only the little finger could be passed through it. In the pyloric half the stomach, and 1 cm. from the constriction, there was a perforated gastric ulcer with a diameter of 1 cm. No pathological change, either naked eye or microscopic, could be made out in the constricted part of the stomach. The diagnosis of an hour-glass stomach is very difficult. It has mostly been unexpectedly found at the necropsy. Inflation of the stomach might reveal it, but the one half might only be distended. Splashing sounds might continue after it had become impossible to withdraw any more fluid by the stomach tube. A certain diagnosis would be looked upon in many cases as an indication for surgical treatment and more recently two such cases have been operated upon by Schmidt-Monard and Woelfler respectively. On the other hand, it is remarkable how the marked hour-glass stomach in this patient gave rise to no symptoms, as she was in good health for 26 years In 13 out of 22 cases of congenital hour-glass stomach a gastric ulcer was found in the neighbourhood of the constriction.—*Brit. Med. Journ.*, July 15, 1899.

Delirium Cordis.

Feige (*Therap. Monate.*, February, 1899) records the case of a man, aged 30, who came to him on January 28th, complaining of shortness of breath. He had been suddenly attacked with acute dyspnœa, which continued up to the time when the author saw him. The patient's face was cyanotic, the respiration 40, and the pulse 200 per minute. On examination, the left side of the heart was found to be enormously enlarged, and a loud systolic murmur was heard all over the cardiac area. The patient was a delicate-looking man, and the author is of opinion that sexual excess was the chief cause of his dilated heart. He had had previous attacks of dyspnœa when a boy, so that it is possible he may have had some forms of congenital heart disease. Feige ordered digitalis and rest in bed. The next day there was no improvement. A morphine injection was given. On January 30th chloral hydrate was tried, and another morphine injection, but this had no effect on the distressing symptoms. The patient was obliged to sit up in bed day and night; his face remained cyanotic, and the lungs showed signs of commencing œdema. After a consultation it was resolved to try digitalis once more. In addition the constant current was applied over the cardiac area three times a day. The anode was placed over the situation of the vagus in the neck, whilst the kathode was applied over the cardiac area. The current was continued for half an hour at a time. The next day, after a quarter of an hour's galvanism, the patient suddenly felt much better, his face became a natural colour, and the dyspnœa entirely vanished. The pulse dropped to 80. The left ventricle had slightly diminished in size. It is possible that the galvanism had a beneficial effect in this particular case. The patient gradually improved. After seven months the author examined the heart again, and found that the upper border reached to the third intercostal space. The right border extended to the left edge of the sternum, and the apex beat was in the fifth space of the nipple line. The first sound was absent over the cardiac area, but was heard in the second right intercostal space. The second sound was loud and slapping. Any unusual exertion brought on an attack of dyspnœa, but not so severe as the one described.—*Brit. Med. Journ.*, Aug. 12, 1899.

The Tonic Properties of Sea Air.

Considerable speculation has from time to time been made as to what causes the invigorating and tonic properties of a sea-breeze. Ozone is very commonly accepted as at any rate an important factor in this connexion, since it is invariably present in air that has been in contact with sea-water, and especially agitated sea-water, and to a smaller extent in the air of the country, but it rarely occurs in the air of towns and crowded places. Ozone, however—and with it probably traces of hydrogen peroxide—is undoubtedly formed by air skimming over the surface of fresh water, and hence the breezes coming over the lochs in Scotland and large lakes and rivers in other places become ozonised and bracing. The Briton has an instinctive fondness for procuring his change or spending his holiday down by the water side, be it sea, lake, or river, probably because he finds, though he does not know exactly why, that the air of water-side places does him more good than the air of the country, where there are trees and beauties of landscape but [illegible] of water. The freshness of the early morning air is due most probably to the formation of dew on the previous night, the transition from the vaporous to the liquid state causing ozonisation of the air with which the condensed watery particles come into intimate contact. This freshness disappears as the day wears on because of the readiness with which ozone is destroyed by organised and organic substances. The exhilarating effect of a sea-breeze may, however, be ascribed to other bodies which are foreign to inland air. Thus sea air contains a traceable amount of salt and iodides, attaining a maximum of 0·022 gramme per litre or about one and a half grains per gallon. These mineral ingredients derived from the sea doubtless accentuate the tonic action of sea air, and further it is probable that ozone interacting with chlorides and iodides would lead to traces of chlorine and iodine being present. Many persons describe the smell of strong sea air as iodous or chlorous, and it has even been said that the starch used in face-powders turns blue at the seaside on account of the iodine in the air forming blue iodide of starch. If that be so the blue and haggard appearance characteristic of many faces exposed to a strongly salt-impregnated breeze would find an interesting, but perhaps embarrassing explanation.—*Lancet*, August 12, 1899.

A Remarkable Case of Wholesale Poisoning by Food.

A party of children numbering over 100 were taken for an outing to Blackheath on Saturday, July 22nd. They came from the West Greenwich School and Working Lads' Institute. All went well until after tea which meal consisted of milk, cake, scones, and cherries, the youngsters apparently enjoying the food. Soon afterwards between 80 and 90 children were taken severely ill, vomiting and colic being marked symptoms. They were lying about the meadow in great pain and the vans which had been used to convey them to the spot were used as temporary hospital waggons. Some of the patients were taken to the Miller Hospital and some to the Seamen's Hospital, Greenwich. We are indebted to the house surgeon of the former institution, Mr. R. S. C. Edleston, for the following information as regards the cases which came under his care, which were two in number and apparently the worst. When brought in by the police both were in a state of collapse. A girl, aged nine years, was very pale, her lips were livid, and the body surface was cold; she was in a state of stupor and wandering in her talk; the pupils were widely dilated, the pulse was imperceptible at the wrist, and her clothing was soiled with alvine discharge which was extremely offensive. She was with difficulty aroused and she readily passed again into a semi-somnolent condition. A boy, aged six years, was in much the same condition, but the lividity of the face and lips was more marked. The treatment consisted of washing out the stomach freely, but there was no solid material in the washings in either case. A hypodermic injection of strychnine was given and brandy internally. Vomiting and diarrhoea continued through the greater part of the night in the girl's case, but [illegible]

[illegible] of the boy. Ultimately they were discharged, having [illegible] recovered from the attack. Mr. Harold H. Colman, house surgeon to the Seamen's Hospital, has also furnished us with similar particulars. He had under his care no less than 48 children who were placed on blankets on the floor of the surgery. The patients had severe vomiting and diarrhœa and were very cold and collapsed. Vinum ipecacuanhæ was given together with a hypodermic injection of strychnine. The vomiting was of a gushing, pumping character and occurred apparently without warning. There was no solid matter in the vomit. Gradual recovery happily ensued and no fatality has since been reported. We understand that bacteriological and chemical analysis of the milk and other food consumed are being made. It is evident that a powerful irritant poison had been ingested in view of the marked toxic symptoms which supervened. Pending the results of this inquiry it is obviously not possible to state definitely whether the poison was due to a mineral irritant or to bacterial products.—*Lancet*, July 29, 1899.

The Causes of the Increase of Suicide.

Dr. William W. Ireland in the July number of the *Journal of Mental Science* discusses the above subject in a broad and interesting way. He refers to the records collected by Durkheim which show that there are always more suicides during the six warm months of the year (April to September). This apparently holds good for all countries in Europe. Thus, of every 1000 suicides per annum from 590 to 600 are committed in the warm summer season and but 400 in the rest of the year. A steady and rapid increase of self-destruction is common to the whole civilised world. "It is most marked in those countries which take leading parts in the world's doings." Dr. D. R. Dewey has recently been studying the question in the New England States of America. He finds that since 1860 suicide has increased about 35 per cent. "In Massachusetts it has increased in 30 years (1860 to 1890) from 70 to 90 to the million living and in Connecticut from 61 to 103 per million." Norway seems to be the only country in Europe where suicide is diminishing. The latest figures given by Dr. F. di Verce in the *Rivista Sperimentale di Freniatria* show that "suicide has (in Italy) continued the movement of ascent which is proper to it, rising from 890 verified cases in 1872 to [illegible] in 1881 and to 2000 in 1898." All who have made a special study of this subject have arrived at the conclusion that there is in Europe and North America a steady increase in the number of suicides. Some writers say that it is mounting in Europe at the rate of 50,000 a year. Different causes have been assigned by sociologists for this formidable rise. Dr. Fehr in his learned work, "Influenza as a Cause of Insanity" (Copenhagen, 1898), states that in Denmark after the severe and widespread epidemic of this malady in 1887-88 there was observed a rise in the number of suicides owing to the mentally depressing and debilitating effects of this disease. Dr. Ireland traces the greater portion of the cases of suicide to severe [illegible] upon the nervous system which may be the outcome of a multiplicity of causes. Among these causes may be mentioned the increased strain of modern life upon the nervous system and this is said to be paralleled by the steady increase in insanity in modern times. Dr. Ireland's studies on the lunacy returns of Norway, Massachusetts, Ireland, and of various parts of the continent accord with the conclusions arrived at by Koch, Kollmann, Cettingen, and Luiner who have made laborious studies on this question—viz., that there is a real increase of insanity. Dr. Ireland also lays stress on the decadence of orthodox religious belief in the great town. "It is in great cities like Paris, Berlin, and Vienna, where agnosticism abounds, that we have the greatest number of suicides." Monsieur Louis Proal in a recent issue of the *Revue des Deux Mondes* (May, 1898), writes a pathetic article entitled "Les Suicides par Misère à Paris." He traces much of this chronic wretchedness to the difficulty of obtaining constant work and to the low state of wages of some employments. He observes that drunkenness in these cases is often not the cause of the distress but the effect, for unable to support their misery they take to drinking and perhaps in the end commit suicide. —*Lancet*, July 29, 1899.

Resection of nearly Two Metres of Small Intestine, and its Effect on Digestion.

Carl Schlatter (*Correspondenz. Blatt. f. Schw. Aerzte*, 1899, July 15th) publishes the following case: An Italian, aged 23, was stabbed in the hypogastrium at 7 p.m. on October 9th, 1898. He fell to the ground with intestine protruding from the wound, but with assistance walked some 300 m to his home, where a provisional dressing was applied; he was brought in an ambulance to the Zurich clinic at 3 A. M. on October 10th. About 2 m. of small intestine, the greater part deep blue or black in colour, with quite dull serosa, was found protruding from the right hypogastrium; there was no collapse. Under ether (4 A.M.) when the skin and edges of the wound had been disinfected, it was found that the prolapsed intestine, jammed fast in the wound, was already partially necrotic; reposition was out of the question, and the only hope lay in total resection. Enough intestine was carefully drawn out to allow this to be done in sound tissue (Wölfler's compressors on each end, Pean's forceps closing the intermediate part, and successively securing the mesentery as it was rapidly divided along its intestinal insertion from the first division of the bowel to the sound tissue at the other end; union of the defect in the mesentery after the forceps had been replaced by ligatures by separate silk sutures and of the bowel by three tiers); the wound was then enlarged 5 by 5 cm. to permit reposition, and it was found that the constricting ring was formed by the slit in the skin, which was only 1.5 cm., and lay 3 finger's breadths above and parallel to Poupart's ligament: on the peritoneal side the wound was much larger. As there was no effusion of blood into the peritoneum or sign of any opening into the bowel, the abdominal wound was closed by suture in tiers. The resected gut was 192 cm. in length, unstretched, and was entirely from the ileum. Except for an attack of urticaria (5th to

10th day p.o.) there was hardly any reaction. On November 3rd the patient was feeling quite well on full diet, and weighed 64 kilos; on December 7th he was discharged weighing 75 kilos, looking well, with a good appetite, and almost daily stool. Careful observation of the assimilation of albuminoids and fat were carried out for 9 days; the patient was left entirely free in his choice of the kind and amount of the ordinary food of the hospital, and consumed a surprising quantity of nitrogenous and fatty matter. The loss of nitrogen was on the average 10.47 per cent. about the extreme normal loss, but the loss of fat was increased, being on the average 13.91 per cent., with variations from 9.47 to 20.26 per cent. In Fantino's patient, from whom 310 cm. of ileum were removed when he was 60 years old, the loss of nitrogen was on the average 29 per cent, that of fat as much as 23 per cent., varying from 17.2 to 34.3, but in spite of deficient assimilation wasting was avoided by over-feeding. Dreesmann collected 26 cases (including his own patient) of resection of more than 1 m. of the small intestine; 17 survived the operation, 5 of whom suffered from digestive troubles; in all the other 12 the digestive functions were uninjured, but in 10 the resected intestine measured less than 2 m. There have been only 6 cases of the resection of more than 2 m. of the lesser bowel: 205 cm. (Koberlé), 208 cm. (Kocher), 215 cm. ileum (Dreesmann), 234 cm. ileum (Shephard), 310 cm. ileum (Fantino), and the most extensive 330 cm. of small intestine (Ruggi) in a boy of 8 for circumscribed peritonitis, and only two of these patients escaped with the digestive function unimpaired, namely, the first (205 cm.), and the last (330 cm.). Dreesmann concluded that resections of less than 2 m. could be borne with impunity when there were no complications, but only young people could support a loss of a greater length without the digestion being impaired.—*Brit. Med. Journ.*, July 29.

The Whipping Post and the Pillory.

We hear much of the brutalising effects of the lash, and one of the ablest judges on the Bench has lately condemned in strong terms its use as a means of punishment. Lord Bramptod, who certainly cannot be accused of flabby sentimentalism, has also spoken against it. On the other hand, Mr. Justice Day has found it the most powerful deterrent for crimes of violence and assaults on women. In view of this difference of judicial opinion on the subject in this country, it is interesting to note that there appears to be a growing body of opinion among judges, lawyers, and the general public in America in favour of a revival of the whipping post. The subject was discussed by the New York Medico-Legal Society not long ago, and nearly all who took part in the debate were in favour of the lash for the punishment of certain offences. Judge Simeon E. Baldwin, of New Haven, expressed the opinion that flogging would often be a more appropriate punishment for minor offences than fine or imprisonment, and he argued that, accepting that the humanitarian position rests on the duty to educate the ignorant and reform the vicious, the whipping post is for many cases the best incentive to education and reform. Chief Justice Charles B. Lore, of the Supreme Court of Delaware, wrote that the efficacy of the whipping post lies in the public disgrace and ignominy attending it, adding that his State had always found this form of punishment the best preventive of crime. Mr. Frank Moss had no doubt that whipping was the proper method of punishment for offences such as wife-beating and cruelty to children, in which manhood was degraded. Similar opinions were expressed by Mr. Clark Bell, the secretary of the Society, Judge C. W. Meade, of the Court of City Magistrates, Mr. John C. Shortall, President of the Humanitarian Society of Chicago, and others. Governor Roosevelt, of New York, and Judge Wilson, of Philadelphia, have delivered themselves to the same effect. Several leading newspapers in the United States are urging the revival of the whipping post. The Washington *Post* has for years persistently advocated this measure, insisting that in it will be found the only practicable solution of a certain class of criminal problems. The Philadelphia *Inquirer* and the Brooklyn *Eagle* take the same view, pointing to the example of Delaware which, owing to the deterrent effect of the whipping post is said to have fewer crimes and criminals than any other State in the Union. Quite recently the Connecticut State Legislature has been urged to re-establish the whipping post for the punishment of criminal assaults on women; it is certainly more humane and less degrading than lynching. In France a revival of the pillory has been proposed by Dr. Prosper Lemaistre. The growth of humanitarian sentiment in that country has abolished one punishment after another till now practically nothing is left that acts as an effective deterrent. As Chief Justice Lore holds that the efficacy of the whipping post lies in the public ignominy attached to it, Dr. Lemaistre thinks that the pillory would be effective, although it causes no bodily pain, from its being "the most poignant moral suffering which can be inflicted on a convict." He asked sixty prisoners which they would choose—an hour of the pillory or three months' imprisonment, and all but two replied that they would prefer the prison. Dr. Lemaistre thinks that besides its value as a punishment, the pillory would have a good effect as an example to the young, and he seriously proposes that on great occasions, such as an exhibition, all the school children in the town should be taken to look at the criminal in the pillory. In short he sees in the pillory the salvation of society. But in this age of feverish desire of notoriety is it not possible that some might see in the pillory an opportunity of exciting public attention that could not be so cheaply purchased in any other way? On the other hand, the Chancellor of the Exchequer would doubtless find in it a profitable means of revenue by renting some of its space to advertisers.—*Brit. Med. Journ.*, July 29, 1899.

CLINICAL RECORD.

Indian
CASES OF DYSENTERY.

By Dr. Amrita Lal Sircar, L.M.S., F.C.S.

Case I. M. B., Christian male, about 42 years old, came under my treatment in November 1896, for acute dysentery. The patient was a well built robust man He says he had been keeping very good health for some time past, and that he was not unwell even for a day. He had been suffering from dysenteric diarrhœa for about 7 days when he came under my treatment

His stools were about 10 or 12 in number during the whole day and night. I called on the 7th of November and, on examining the stool, found that there was a small quantity of fæcal matter mixed with a large quantity of blood. I gave *Ipec* 6x three times a day and ordered him to take slops only, as he used to get very slight fever towards evening. Next day report came that there was not the slightest improvement whatever.

8th. *Merc. S.* 6, was given twice

9th. No marked improvement. *Merc S.* 30th was then given.

10th. Report came that the number of stools was smaller, about 8 or 10 times a day, but the fever, pain and character of the stools remained the same. All medicines were stopped

11th. Called. Examined the stool and found it to be flesh colored tough mucus. There were severe pain near umbilicus before stool and soreness in the anus after stool I prescribed *Nux V.* 6.

12th. The patient was remarkably well. The fever had gone and the stools were only two in number Those two stools were not much stained with blood. There was no pain in the umbilical region.

13th. The patient had one formed stool. He felt well. Gave him well-boiled rice with fish soup to eat.

14th. The patient was all right.

Case II. A Hindu girl, about 5 years old, came under my treatment for a severe type of dysentery on the 20th December 1896. There was high fever and the number of stools were about 15 or 16 during the course of twenty-four hours. The stools at first were thin and bloody *Merc. S.* 6 was given. She took it for two days but no marked improvement was noticed. On the 22nd I was informed that the girl, before she was ill, had taken some ricinus seeds. Thinking that these irritating things might have been the cause of her dysentery I gave her some Camphor globules. On the 23rd the father of the patient reported that the fever was slightly less but the stools remained almost the same in character and number. I did not give any medicine but ordered him to give soft rice with *gandhal* soup. Next day the report was that the fever did not increase but the stools were exactly like pieces of flesh. Her father was greatly alarmed at this. I called and examined the stools which were merely tough mucous tinged with blood and thus looked exactly like pieces of flesh. There was also severe cutting pain near the umbilical region before each stool. I gave *Nux V.* 6, and told him to exhibit it twice during the course of the day

25th. Father of the girl reported that she was much better. The number of stools had greatly diminished, the fever had subsided, and all other complaints had almost gone. The same medicine was repeated.

26th. Cured There was only one healthy stool. Soft rice with fish soup was given to eat

Remarks. From the above two cases it will be noticed that the stools were very peculiar in character almost flesh like. I had under my care two more cases almost of the same type, whose detailed reports unfortunately I cannot give, but which were perfectly cured by *Nux V.* 6. Were these pure cases of dysentery, or were they cases of malarious fever accompanied by constipation?

Foreign.

CASES OF INTERMITTENT FEVER.

Reported for the Society of Homœopathician,

BY FRANK W. PATCH, M.D., SOUTH FRAMINGHAM, MASS.

A list of fifteen cases treated during the season of 1897; with comments. Reported for the Society of Homœopathicians.

CASE I. Mrs. S. J, fifty years, dark complexion, stout, nervous temperament; attack in afternoon or evening, beginning in upper extremities, shaking, restlessness; despondent, loquacious delirium, talks of killing herself, at one attack left the house and was found wandering toward a brook, where she said she would drown herself; wanted to be held while shaking; thirst, bitter vomiting, severe headache, worse from light and noise, sweat on face and hands; peculiar mapped tongue appearing like a ringworm. After Lycopodium, the chill ceased for a time, only to return in a week or so with redoubled [illegible]

CASE II. Miss E. P. B., fifty years, stout, light complexion, of inferior mental development; tertian. Paroxysms in the afternoon, beginning with cough; creepiness and shivering without real shaking; headache with throbbing; bitter vomiting; drinking aggravates nausea; heat, with flushed face; thirst; sensitive to odors of food; desire for open air; tongue red and clean; owing to the want of intelligence in this patient, it was particularly difficult to obtain reliable symptoms; the cough and severe vomiting seemed the ruling features. Ipecac, CM (F.), was given with a palliative result. Gradual improvement went on in what seemed an orderly manner, for two weeks when the symptoms returned with paroxysms. Pulsatilla, CM (F.), cured.

CASE III. A. F., unmarried woman of forty years; thin, light complexion; tertian; anticipating Chill, bitter vomiting during or at close; mostly in hands and arms, cough; yawning; heat, with flushed face; nausea; sleepiness; sweat, with headache, vertex, and temples as though screwed in a vice, no thirst in any stage; dislike of talking; throbbing in head; aggravation of general feelings from acids. Ferr-met., CM (F.).

CASE IV. Mrs. H., seventy years, dark complexion, nervous, loquacious temperament; irregular tertian. Chill consisting of coldness without shaking, not always perceptible to nurse; thirst; tongue with broad, dry centre, like chip of wood; drinking nauseates though thirsty; burning of feet; greenish vomiting; pain in right arm; headache through temples; involuntary urination; incoherent talk; rolling of head from side to side; sensation as though apart and could not get herself together again; burning in stomach; red pepper-like sediment in urine. Bell. CM (F.).

CASE V. Miss H., age forty, dark complexion; tertian afternoon paroxysms Prodrome; thirst; headache in vertex and eyes; chill, with shaking above knees; restless, irritable; desire to be alone; aggravation of headache from noise and light, catching pain in the hypochondrium on deep breathing; at first thirst in chill for ice water, which aggravated, later no thirst in chill; heat, with severe headache and throbbing in vertex, as though eyes would be pushed out of head; intense, burning thirst, mental confusion, covered, sleep, sweat from below upward, thirst for hot drinks; uncovered, sweat at night in sleep; stiffness of muscles of neck and back on waking each morning; hives appearing night before chill.

The full picture of this interesting case did not come out well at first, the chill, as noted, being absent and many of the other symptoms indistinct. Nat-mur., CM (F.), served to reduce it to a beautiful state of order, the shaking chill then coming out with severity, and the way seeming to be made clear for the curative remedy, Ignatia, CM (F.).

CASE VI. C. B., three years; plump, medium complexion, sallow skin; anticipating, tertian; afternoon Chill with cold extremities, blue fingers; quiet; thirst before and during chill; heat and sweat with thirst and restlessness; lachrymation; perspiration of head; fretful. Nat-mur., CM (F.).

Case VII. Mrs. E. O. D.; seventy years. This case reported two years ago as an unsatisfactory one, making a doubtful recovery on Nux-vom. This year returned as was expected sooner or later. It should not have been reported before. Chill in forenoon, anticipating, tertian, preceded by pain in back and legs, thirst; tongue with broad, white centre, wandering delirium throughout intense heat; no sweat. Hyos., CM (F.).

Case VIII. M. C.; about seventy years; a weak-minded old man, said to have been disappointed in love in young days; hardly competent to answer questions intelligibly; tertian; forenoon; only shivering chill, frontal headache; nausea; thirst; flushed face in heat; trembling; twitching of muscles about mouth; stupid, half-sleeping condition, perfectly quiet, from which only a grunt could be elicited in rousing. Phos. ac., CM (F.).

Case IX. H. S.; child of sixteen months; light complexion; tertian, afternoon. Chill with shaking; goose-flesh; sleepiness; nails purple, paleness; quiet, no thirst, heat, with flushed face; gasping respiration; palpitation visible; sweat profuse on head, neck, and face; impatient, dark circles under eyes; skin yellowish. Arsenicum, CM (F.)

Case X. F. S., active, wiry man of thirty-five; dark complexion; tertian, anticipating. Chill very severe, with thirst; covered, face; purple, ringing in ears; tongue white; heat, and sweat following in order with thirst. Nat-mur., CM (F.)

Case XI. Mrs. G. T., forty five years, full habit, reddish complexion; tertian, anticipating attack. Chill beginning in arms, going up and down back, nausea, bitter vomiting, thirst, vomits soon after drinking, cutting pain in left hypochondrium and in epigastrium through to back, worse from jar, breathing, etc.; thirst for large quantities of ice water in heat, vertigo on rising; tongue, broad white centre, red, dry, edges, dry mouth, backache, faintness; intense burning heat with great physical restlessness and mental agitation. Arsenicum, CM (F.)

Case XII. Mrs. J. B. McC., fifty years, stout, plethoric, dark complexion; tertian, changing to quotidian. Chill with shaking; covered, cough, aching of left shoulder, preceded by left-sided headache; vomiting of bile, heat, with mild delirium; flushed face; chilly, if uncovered, much thirst, restlessness; sweat, profuse, sticky, hydroa about mouth, tongue dry, brown centre, white edges.

This was one of the most trying cases imaginable, and reflects little credit on the prescriber. Search after search was made for the similimum, with no further result than palliation or some slight modification of symptoms until, on the indication of the time of chill, Gamboge, CM (F.), was given and the attacks ceased for a week or more. It seemed hardly possible that this could be permanent and, sure enough, it was not; everything returned as before. This time another and more careful examination revealed the fact that for six months previous to this attack the patient had suffered from a watery diarrhœa, worse during the day, with sleepiness in the middle of the day, before dinner. Aloes CM (F.), made a prompt and lasting cure. It seems strange that, even after years of experience with this disease, one will neglect to get the totality of symptoms at the start. These lessons must be learned over and over again by the hard knocks of failure. Often the full picture does not develop at the beginning of a case of intermittent for the need of an antipsoric remedy or, through natural sluggishness of the system, but there is no reason why old smyptoms should not be ferreted out, except when one is so blinded by what is immediately before him that more important things are lost sight of.

CASE XIII. Illustrates another feature in the treatment of these cases, the need of paying strict attention to the psoric features of the case in hand in order that the accurate remedy indicated may have opportunity to properly do its work. Mrs. D. N., forty-five years; dark complexion, thin, wiry, irritable, nervous temperament; tertian, anticipating. Chill beginning in hands; numbness of hands; coldness of extremities; backache; pain in legs; nausea, sour vomiting, heat, with thirst for large quantities; restlessness, vertigo; sweat, only when sleeping after the attack; tongue with broad, white centre, red tip, hydroa about mouth; tongue trembles on protrusion; restless sleep after 2 A.M.; impatient and irritable. Nux vom. was given with great confidence here in the early part of the case, waited for, and yet no result. Then other studies were made, and several other remedies used without avail. Finally a dose of Sulphur was prescribed, which apparently of itself offered no check to the progress of the chills, but Nux vom., CM (F.), was then given again with a most satisfactory and prompt cure following. Here the antipsoric should have been given in the first place, and would have been had the nature of the case been thoroughly understood. The next case further illustrates the same principle.

CASE XIV. A. S.; forty-eight years; slight build, dark complexion, easy-dispositioned man. First attack, July 15th, chill, with vertigo; foul tasting mouth; great thirst, flushed face; intense burning heat after slight chill; dry, tickling cough, hoarseness; dull backache. Bryonia, CM (F.), promptly relieved, and after a few days the patient was out and went away for a vacation. On the day of his return, before getting into the house, he was taken with a most severe chill, and it was at once seen that a tedious fight was to be expected. The Bryonia, of course, failed to do anything now, except to make one undecided whether to let it alone or work out the case anew. The picture finally presented was as follows: Chill, with shaking all over; cough before and during sensation of coldness for some time before shaking begins, vomiting; heat, with thirst; backache; nausea after drinking, and when lying on right side; face flushed; faintness, amounting nearly to collapse at times; throbbing head; sweat, with chilliness and cold feet, must be covered; no thirst; tongue with heavy, yellow coat; face, sallow, brownish; belching after eating. Sepia, CM (F.).

CASE XV. A. H., young woman of twenty; tertian, anticipating type; prodrome; thirst; nausea; paroxysm begins with nausea and backache; hands purple in chill; intense, throbbing headache in vertex and nape in heat, worse from motion; impatient; face flushed; drinking aggravates nausea; feet very cold: pillows seem hard; sleep immediately follows heat, tongue white, red tip; continual aching of the neck, wake every morning with stiffness of the muscles of the nape, and aching from nape to spine; belching immediately after eating.

This was another trying case where a better knowledge of materia medica would probably have saved much discouragement for the physician and many suffering days for the patient. It seemed at first as though Nat-mur would surely make quick work of it, but, to my surprise, it seemed to do nothing, not even a palliation followed its administration. Several other remedies were given with a similar result, when a more careful study of the symptoms seemed to show that peculiar conditions present were the singular headache and the terrible throbbing. Glonoine was about the only remedy that just covered these symptoms, though it did not seem possible that it could cure this case. It was given and the chills ceased for a few days, together with the anticipation and the headache. It was only temporary, however, and within a week the attacks, with slight anticipation, began to creep back again, but without the head symptoms or the throbbing. Now Nat mur., CM (F.), was given again with a beautiful cure resulting. This seems to be a singular instance of the occasional necessity of a short acting medicine, which should prepare the way for the deeper antipsoric remedy that was previously ineffective.

DISCUSSION.

Dr. Kennedy—This is one of the papers I am always interested in. I want to ask the doctor if he has noticed the time of day of the return of the paroxysms, and if he considers that of value when he is selecting his remedy? I notice also that he does not mention thirst as being peculiar to any one of the three stages. I have had but little experience with the disease. I have been able to cure the few cases I have had.

Dr. Pease—I notice in the reports of the cases that most of them were elderly people. Is that correct, doctor?

Dr. Patch—There were two young persons. One was twenty.

Dr. Pease—Was this their first experience with the disease?

Dr. Patch—I do not recollect at this moment whether any of these were second attacks or not, but I think they were all first cases.

Dr. Morgan—I do not feel that I can say any thing instructive to Dr. Patch, for the cases and his management of them show such thorough investigation and careful research in finding the right remedies, that I do not think any man could improve upon them. I think he has done wonderfully good work I have found the time of day the chill occurs of a great deal of importance. I have also found that an excellent time to give the remedy is just between the chill and the fever. Remedies act better when given then than at any other time.

Dr. Adams—I merely wish to say that I think Dr. Patch is to be congratulated on the care he has taken to adhere strictly to Hahnemann's rules. The paper is an inspiration to me.

Dr. Pease—Have you ever had a Quinine case ?

Dr. Patch—I rarely find a Quinine case. In an experience of almost ten years with the disease I have seen one or two cases that have been cured by China.

Dr. Pease—Dr. Patch, have you noticed any of the conditions of locality in regard to the type ? I believe I mentioned a few remedies that seemed to be most called for in certain localities Have you investigated that ?

Dr. Patch—I had three Bryonia cases a few years ago in one locality, but it may have been mere coincidence My cases probably differ from those of the West The disease here is apt to attack people who are not in good general health and bring out the psoric condition of the individual.

Dr. Morgan Down near the lake in Baltimore there is a district where nearly every case I get requires Eupatorium There is a swamp region there, and the Eupatorium grows in abundance.

Dr. Davis—I have read that in every locality would be found the remedies to cure the diseases peculiar to that region. The question arose in my mind whether the Eupatorium was not the father of the disease. It is a curious thing that these plants should be where the disease predominates.

Dr. Patch—In closing the discussion, I will say that I think Dr. Kennedy will find in reading the cases that the time of day is not important in these particular instances The majority of my cases are of what is termed the "anticipating" type, in which the time of day cannot be depended upon I do not take it into account. —*The Homœopathic Physician*, June, 1899.

Gleanings from Contemporary Literature.

THE DEATH-RATE.

By H Cameron Gillies, M.D. Glasg.

Some time ago, for one reason and another, I began to suspect that the "death-rate" of the Registrar-General was not quite the exact and scientific factor in human affairs which people usually take it to be. I have since then examined the matter somewhat closely and the more I have examined it the more I have been satisfied that our present method of estimating the death-rate is wrong in principle, and that consequently any reasoning based upon it or inference drawn from it must be wrong or lead to wrong and misleading conclusions If the basis of our calculation is vitiated it is clear that every detail of our death statistics drawn therefrom must be wrong also of necessity. My own position now is that the so-called "death-rate" is an intolerable fallacy, but I submit myself to your broader and better judgment to put me right if I am wrong.

I recognise that it is not by any means easy to place this matter clearly and convincingly before you, even assuming that my contention is right. It seems so simple and so natural to calculate the death-rate by the method which we at present use that to call it in question must savour of excessive temerity. I am, however, confident that I shall have your utmost indulgence. You will bear with me if I begin with the elementary facts of our death statistics. Our death-rate is, as you know, calculated as so many deaths at all ages to 1000 living at all ages. This is what Dr. Farr, the father of vital statistics, called the "crude" death-rate, and it is the same as is now called the "standard" death-rate for the whole kingdom. Dr. Farr held that this death-rate was a fact, a reliable scientific fact, and a useful index of the sanitary condition and of the vitality of a population. Since Dr. Farr's time and up to the present we have taken this "rate" to be a correct and serviceable statistic, and appeal is made to it constantly to prove that by better medical means and methods, by better sanitation and generally by better conditions of living, human life is prolonged and its effectiveness raised because the ratio of the deaths to the living has been diminished. Sir T. Grainger Stewart, in his address to the British Medical Association at Edinburgh in July last year, appealed to it when he said that "medical science has reduced the death-rate in England and Scotland by a fifth since 1855." Professor Corfield not long ago said that we should never rest satisfied until the death-rate was reduced to 10 per 1000, again appealing to this rate as the index and the measure of our progress. Many such appeals are, as is well known, heard every day. Now my object is not to attempt to show that medical science is of no effect or that better sanitation and better conditions of living have no influence for good. I accept without question that all these and all similar efforts are for good and that they all profoundly affect the efficiency of human life. But I shall contend that our method of calculating the death-rate is fundamentally wrong, that a rate so determined is not a reliable or useful statistic, and that as a profession we should not appeal to it as an index of our scientific progress or as a measure of the efficacy of our efforts to do good and useful service.

As the very first acceptance of the thought to express the Deaths in terms of the Living is the source of all our death statistics, whether they are right or wrong, I beg your earnest attention to examine if this is a "rational ratio" as I venture to express it. A ratio may of course be stated between any two numbers or numbers of things. I think I heard of a man who cast a ratio between the number of Dutch cheeses in Tottenham Court-road and the number of bald-headed people in this country. We may certainly, as we have for so long done, cast a ratio between the living and the dead in any given time, but we ought to be sure that it is a right and reasonable ratio before making it the chief corner-stone of our vital statistics. A ratio between any two vital results can only be stated with any excuse of reasonableness when the events or results have either the same or a similar and constant determining cause. But it appears to me to be impossible to find in all nature any two causes operating more dissimilarly or in effect more differently than those of life and of death. One might for this reason be somewhat in doubt of the validity of the death ratio, but it is so simple, as I have said, and so seemingly right to say that out of so many living persons so many die in a given time that our prejudice is disarmed and we accept the rate. The more inviting the error, if it is an error the more dangerous it is, for it is the more difficult to displace because of its seeming reasonableness. This is what makes my task so very difficult.

Since Dr. Farr's time it has been found by his successors and by others that the standard death-rate is not the accurate, useful fact which it was taken to be. It fails as applied to various localities, so a special rate is cast for each locality which is named the "recorded" death-rate – that is, the deaths in a given locality are calculated in terms of its own living population. These two rates—the "standard" and the "recorded" rates—differ always and sometimes they differ very much. The standard rate for Croydon is 18.37 per 1000, but the recorded rate is only 13.07 per 1000. On the other hand, the standard rate for Salford is only 17.03 per 1000, whereas the recorded rate is 24 per 1000. Now, I think we may with perfect justice ask, What is the meaning of these figures or what is the sense in them or where is the fact? I submit that there is no sense in them nor any fact at all, but that they are a confusion and a delusion, self-contradictory and self-destructive, if we only give them a little thought But that is not all. Another rate is cast, or rather is determined, which is called the "corrected" rate. This rate is found by multiplying the recorded rate by what is called the "factor for correction." Now, as I do not and cannot understand how this seemingly arbitrary factor for correction is found I must let it alone, but as it differs for every town and for every locality, and most likely from day to day, it cannot be taken as a reliable element in our statistics. It is simply a tinkering of absurdity, making it, if possible, more absurd.

We have seen that the recorded rate is an effort to escape from the huge, gross errors of the standard rate, which is never right but is sometimes as much as 30 per cent. out on the presumably more accurate recorded rate. But the corrected rate, whatever may be its object, is in some degree a return to the erroneous standard rate; it is therefore and by so much incorrect and worse than useless. Why, may we not ask, are all these so various rates calculated, and these corrections, if the death-rate is a fact and a fundamental statistical truth? If the death-rate be, as I have put it, a rational ratio and not a Dutch cheese ratio these variations and corrections are not necessary and they must be wrong; on the other hand, if these corrections are necessary, as even the foster-fathers of the death-rate admit them to be, then and therefore our death-rate, or the ratio cast between the dead and the living, is not a rational or valid ratio.

The recorded death-rate for any community is calculated for that community in exactly the same way as the standard rate is calculated,—namely the number of deaths against 1000 living. If the principle is wrong for the greater it is wrong for the less also; if it is wrong in the general it is wrong in the particular; but it is less wrong because the basis of calculation is narrower and the effect of a primary or initial error is therefore less. If we follow the logical indications presented to us by this we can understand that the narrower and the more homogeneous or uniform the population is upon which a rate is calculated the nearer must the rate approach to accuracy. Some have said that the deaths at various ages calculated against the living at the same ages give the only true death-rate. This narrows the basis and secures the uniformity of age, and so far it is in the direction of accuracy, but even then it is only comparatively or relatively true—true to the extent that the basis is narrow and homogeneous as against the wide and mixed basis of the whole or of a large population—at all ages and in all conditions. Every effort to specify or to classify the basis of calculation as to age, occupation, manner of life or other circumstance tends towards the accuracy of the rate The recorded rate for a small town must be nearer to accuracy than that for a large town, and for a quiet, sleepy country village with its approach to uniformity of life and circumstances it must be more accurate than for even a small town with its greater activity and more mixed forms of diligence. The rate calculated within a profession or trade is much more accurate than is that for mixed populations. And so on. The narrower the basis and the more the individuals thereof are living in uniformity of conditions the more exact is the rate. But the narrowest basis is unity, and one man is the basis that is exposed to the least variation by circumstances. It is clear therefore that a death-rate calculated on a basis of one is the only rigidly correct rate; and it is clear also that a rate calculated on a basis removed from unity diverges from truth and accuracy in the degree that it is so removed, and that the error increases in magnitude till it culminates in the standard death-rate for the whole kingdom, for this is the crown and limit of all statistical absurdity and delusion.

I have said that primarily and essentially it is wrong to reckon the dead in terms of the living—just as wrong as if we reckoned the living in terms of the dead. The relationship is the same in the one case as in the other. But I have not as yet heard it proposed to make a rate of the living in terms of per 1000 dead. We are wrong in our beginning; it is not surprising if we are wrong in our progress. Whether we are to continue wrong always and all the way to the end remains with ourselves to be determined. Let us look at the matter from another point of view. This is how we state the case :—

Living (in any given time) : Deaths (in that time) : : 1000 : Rate.

In order to simplify things let us consider a community of 1000 persons. Let us consider the usual 1000 persons of the returns. Let us say that of these 10 die annually from infancy upwards, until the last, after living his full seculum or life-period, dies aged 100 years. It will be readily understood that the death-rate for this, let us say, community of 1000 will increase from year to year, because the number of the living—the first term of the ratio—is less and less by the deaths of previous years. For the first year the "rate" is 10 per 1000; for the second year it is 10 per 980; for the fifty-first year it is 10 per 500, or 20 per 1000, and double the rate of the first year; for the ninety-first year the rate is 100 per 1000, or 10 times that of the first year; and in the last year of the seculum the rate will be 1000 per 1000—for all die. This statement is "diagrammatic," but I think it may be made useful to simplify what is a very intricate matter indeed—as usually set forth.

We may say that medical science and medical art have no duty outside or beyond the seculum or the full life of mankind. Our whole responsibility is within that period—to purify, promote, and strengthen the serviceable value of human life. Now the order of things which obtains in our country, according to the present method of reckoning, is approximately as follows. About 70 per 1000 die in infancy, a scandalous, disgraceful record on which medical effort has not made the slightest impression within the past 50 years; a further 8 per 1000 die below five years of age; and another 5 per 1000 die below 10 years of age—that is, about 83 per 1000 per annum of a "death-rate" in the first 10 years of life. At the age of 15 years the "rate" is 6 per 1000, at 20 years it is 8 per 1000, at 25 years it is 10 per 1000, at 35 years it is 13 per 1000, at 45 years it is 17 per 1000, at 55 years it is 30 per 1000, at 65 years it is 60 per 1000, at 70 years it is 130 per 1000, and above this it is very much more, 1000 per 1000 in the last years as before, though, by the way, the Registrar-General does not say so. By his method the deaths per 1000 at all ages only amount to some 725, so that on his showing we have with us a solid percentage of immortals—that never die. This, however, is only one of the lighter discrepancies of our death statistics.

I have given a fanciful, diagrammatic disposition of the deaths of an identical 1000 persons within a seculum and I have submitted the ostensible approximate to actuality supplied by the figures of the Registrar-General. The point is that howsoever, or whensoever the individuals in a given 1000 persons die within the seculum the death-rate for an identical 1000 per seculum is for ever the same—cent. per cent., 1000 per 1000, one per one. This is the true death-rate fixed absolutely which no art or craft of man can alter or disturb.

Another point of great importance which I should wish to make plain is that if an identical 1000 starts out on its secular journey to-day, another starts to-morrow, and another the day after, and so on for ever, it is clear that, all things being the same, the second 1000 arrives at its goal at the end of its seculum only one day behind the first; and so with the others, following the one on the heels of the other. Now suppose that the full dream of medical philanthrophy and effort is realised. Suppose that all the identical thousands and all the individuals thereof are permitted or enabled to live the full and complete days of their seculum and that everyone dies at the full age of 100 years, it is evident that this will in no way disturb the true death-rate; for excepting in the first identical 1000 within the seculum of which the death-rate may have been altered—or let us say diminished—there can be no alteration in subsequent secula, for death comes to all as if there was no disturbance of the rate, as if there was no medical science in existence, and no philanthropic effort whatsoever.

I have here stated the utmost that can be hoped for human beings. I have supposed that everyone lives 100 years and yet this in no way interferes with the true death-rate except during the first 100 years. Now if the longest life has no influence on the essential death-rate to diminish it how can any variation at ages short of the full seculum have such influence? If the longest life does not and cannot diminish the death-rate how can a short life or anything short of the longest have such effect? I submit that any reasoning in that direction is untenable. I submit that nothing can alter the true death-rate except for a very short and inconsequential period.

Now, it will be comparatively easy to understand that the middle term of our proportion—namely, the deaths in any given time—is practically fixed and that for anything but very short periods it is invariable. So any difference in the death-rate must be brought about by a variation in the first term—the living. If in a community of 1000, such as I have supposed there are 10 per 1000 of births per annum the population will remain stationary, unless, of course, there is a large immigration from outside. But if the births exceed the deaths the population increases and this at once brings about a seeming reduction of the death-rate, because the divisor, the first term, is increased. We may without violence imagine a community of 1000 into which hundreds of children might be born in a year. In such case the first term, the number of the living, is increased very much, and because the middle term remains the same the death-rate is greatly diminished when in truth there is not the remotest, slightest connexion between the two events of increased births and of seemingly decreased deaths.

There will now appear some reason for believing that while there is no conceivable relationship and therefore no intelligible ratio whatsoever between the number of deaths in a community and the "death-rate" of the Registrar-General there is some sort of relationship between his death-rate and the number of births. Whenever a town or community is found with an exceptionally high birth-rate the death-rate is low. Bristol, for instance has a birth-rate of 33·8 per 1000 and a death-rate of 16·5 per 1000. On the other hand, a low birth-rate usually goes with a high death-rate. Salford has a birth-rate of 30·9 per 1000, but a death-rate of 41·5 per 1000, whereas Sunderland has a birth-rate of 44·8 per 1000 but a death-rate of only 19·6 per 1000. These are only specimen examples which might be multiplied to any extent. Now, with a steady birth rate of about double the death-rate accumulating year upon year and augmenting the number of the living, the divisor in our ratio, it seems no great wonder that the death-rate—the resultant fourth term—should get less and less, but what is not easily understood is how medical science comes to influence the result, except perhaps by improved obstetrics.

A very instructive glance may be cast at the returns for London for the past 10 years. There is always an annual excess of births over deaths and whenever the excess is greater the "death-rate" is less and when the excess is smaller the "death-rate" is higher. In 1889 the excess of births over deaths was 56,071 and the death-rate was 18·4 per 1000; in 1894 the excess was 54,047 and the death-rate was 17·8 per 1000; in 1897 the excess was 52,657 and the death-rate was 18·2 per 1000; but in 1890, when the excess was only 38,893, the death rate was 21·4 per 1000. The teaching in this seems clear enough. It shows that all that is necessary to diminish the death-rate—that is, the death-rate of the Registrar-General—is to increase the birth-rate. Again, from 1861 to 1881 there was an increase in the London Living—that is, in the first term of the proportion—of over 1,000,000—from 2,803,989 to 3,816,483; and from 1871 to 1891 there was an increase of very nearly 1,000,000—from 3,254,260 to 4,211,743; which briefly means that 500,000 are being added to the first term, to the divisor in every 10 years. Now this in the 40 years and more since 1855 ought to count for something in making the "rate," of which it is the most important because the most variable element. In 1855 we divided our middle term by a figure somewhere about 2,500,000; we now divide by nearly 4,500,000. The middle term does not vary within any distance of so fast or so much. In 1887 it was 82,443 actual deaths for London and in 1897 it was 80,543, no increase at all, but a diminution. Surely it is clear, then, whence comes this reduction of the "death-rate." Medical art need not have put even a single day on a single life during these 40 years and this "death-rate" would have gone down all the same. The sooner medical science ceases its appeal to this poor delusion the better.

Another element of considerable influence which comes into the divisor is the number of immigrants, which for London alone is between 30,000 and 40,000 per annum. This alone would, in a period of 40 years, make a distinct diminution in the apparent "death-rate," but as it is included in the totals given it does not concern us further.—*Lancet*, July 22, 1899.

MIND CURE VERSUS DRUG CURE.

Read before the Maryland Homœopathic Medical Society, May, 1899.

BY G. H. WRIGHT, M.D., FOREST GLENN, MD.

This is an age of new ideas and new theories, in fact an evolutionary period in the World's history. We, as physicians, should keep abreast of the times, and, especially in our own domain, if any new method of cure is advanced, should investigate it rationally and thoroughly. Up to the present we have done so, if the advanced cure has had a physical basis upon which it depends. But for some time we have been confronted by a method of cure, that completely ignores drugs, dietetics, antiseptics and hygiene. In the past few years mental healing has come prominently into view, and now numbers thousands among its adherents, many of them recognized in their respective communities as persons of intelligence and education.

Some call themselves Christian scientists, basing their belief in the cure of disease, on the teachings and miracles of Christ, especially those in which he healed the sick. With this class of mental healers, their views form a part of their religion, and in different parts of the country they have erected churches which have flourishing congregations. Another class call themselves mental scientists, and while not exactly antagonistic to the former class, do not give a religious dress to their belief.

Both classes, however, base their theory of the cure of disease on the supposition that mind is superior to matter, therefore should control it. For convenience I shall put them both under the head of mental scientists.

As before stated mental scientists pre-suppose that mind is superior to matter, and therefore should govern it. This is not a brand-new idea, any more than homœopathy was with Hahnemann. Only it is now being elaborated as homœopathy was by him. Its advocates claim there is no such thing as disease or sin, meaning that disease or sin is not eternal, having had its beginning in man's transgressing physical and moral laws, the result probably of man's free agency and environment. Disease or sin will exist, or appear to exist, until abolished by the universal acknowledgment of health or goodness as the only reality.

Its teachers are enthusiasts and extremists, if you will, "cranks." This of itself is not an objection. Every new thought that comes to mankind is so introduced. Enthusiasm, absolute belief in its universal application, is necessary in order to attract the world's attention to a new idea. Gallileo, Columbus, Luther and John Brown were the "cranks" of their day, as were many others whose names may occur to you. Around the central thought, that mind should and can control matter is added psychological mystical ideas that are mostly speculative, and in an atmosphere too ethereal for the practical mind to exist. I shall not attempt an analysis of their views and theories, other than confine my criticism to their main contention, that mind controls matter. One great objection I have to mental scientists is, that, as a rule, they have a self-satisfied, know-it-all, holier-than-thou personality, that is rather irritating to the humble being who is grappling with material problems.

Theoretically, I believe that homœopathy is capable of curing every disease with which mankind is afflicted, provided, of course there is sufficient so called vital force to serve as a back-ground. But, practically, I find that either through ignorance of the similimum, or to circumstances surrounding the patient, I am compelled, frequently, to resort to allopathic or palliative treatment. Theoretically, mental science may be true, that mind is higher than matter and should govern it seems plausible. But unfortunately this world of ours is continually presenting conditions to which our theories cannot adjust themselves. Not only do we find it so in the healing art, but in the religious, political and social fields as well. As a noted statesman, who at present is in a state of innocuous desuetude said, "it is a condition and not a theory that confronts us." It is a condition of human life and not a theory of how it ought to be that confronts the mental scientist.

Every physician knows that thought, which is the expression of mind, is a prominent factor in the cure of his patients. A physician who inspires confidence in patient and family, has a cheery way with him, and looks on the bright side of the case, is a mental healer to that extent, though he may not be aware of it, and his drug treatment is so much the more effective on account of his individuality. Sac lac is a powerful remedy in mental therapeutics; but it has yet to cure a disease that all our means of diagnosis demonstrate to be an affection of the animal life. They claim that our drugs act by reason of the mental thought that accompanies their administration. This claim will not pass muster. Every drug makes its own peculiar impression on the physical body, practically the same impression in every case, whether the individual is aware of its action or not. The very first human being who took the drug, as opium for example, received the same physiological effects as are familiar to us to-day. There was no thought floating about to make that impression. A drug is matter, acts on matter, produces physiological changes in matter, which can be demonstrated to the physical senses. It is no unusual experience for a physician to give a remedy with confidence as to its being the similimum, only to find on a subsequent visit that he was mistaken. Again he gives a remedy with serious doubts as to its being the similimum, but later on he is convinced that it was. Surely, in either case thought cut little figure.

We do know that under stress of excitement persons have been unaware of pain in an injury, or due to disease, that under ordinary circumstances would be pronounced. I, myself, have had such an experience. Savages undergo self inflicted torture, apparently, without much suffering, tortures that the ordinary civilized man would faint under. The mind here certainly controls the body. It is a question to what extent the mind could be cultivated to not only prevent physical pain, but prevent many diseases from gaining a foothold in the organism.

Are then the teachings of mental scientists fallacious? Not entirely. The time may come when their method of cure may supersede drugs. Cures are made by them to-day, and it will not do to merely say, that they are only cures of imaginary disease; imaginary or not they are real to the patient, and the patient's decision is what counts. They also meet with failures just as we physicians do. In what class of cases do they meet with failure? In cases of organic disease, where pathological changes have taken place. In cases caused by a toxine or other poison, cases, in fact, where there is disorganization of tissue. Here mind has slight sphere of action, as humanity is at present constituted, so means, physical means, must be employed to overcome physical disintegration. Mental scientists claim cures of diphtheria, pneumonia, typhoid fever, etc., but we know that patients sometimes recover from these and like diseases without any treatment whatever, mental or drug. We likewise know, that they lose patients from these diseases, as well as the doctors do, whom they condemn.

In neurotic diseases, those intangible cases, where our instruments of diagnosis give us little light, and where we know from experience drugs rarely cure, I can conceive of benefit from mental science. We, as physicians, have long recognized the power of mental and moral suasion, in neurotic cases, but few of us have used this power intelligently. As a profession, we have not made a rational study of it. It is not taught in our colleges, or only incidentally. Now the underlying thought of mental healing, namely, that mind is superior to matter, is a good one in my judgment. We should take up this idea, find out where it applies and where it does not apply, and do it scientifically. It will not do to condemn the whole teaching of mental scientists as absurd. We already know that the mind has a powerful influence over the body. I must confess that much of their teaching appears to my mind the veriest "rot." My mind may be at fault, but it is the only one I have to finally depend upon.

I can see some truth in their claims. If they can eliminate the thought of fear from mankind, fear of disease, discourage worry, teach one to preserve his mental equilibrium in the various trials of life, these things of themselves will prove of vast results, in preserving the tone of the physical body, and its resisting power against disease. But to ignore a broken bone, diet in typhoid, exposure in pneumonia or the destructive process in carcinoma, does not find a willing listener in me.

Heredity is a bugbear that throws its pall over many luckless victims. If such a person could be made to believe that heredity is only a tendency within the power of the individual to overcome, a species of mental healing would cause the result. There is no mental heredity of sin that can deprive the soul of its divine heritage from God. Nor can any physical tendencies or diseases, produced in the ancestry, by transient environment or cond-

tion, stand against the advance of science, the emphasis now placed on hygiene and sanitation.

Ella Wheeler Wilcox, in her poem entitled "Freedom," brings this point out nicely.

"I care not who were vicious back of me,
No shadow of their sin on me is shed,
My will is greater than heredity,
I am no worm to feed upon the dead.

My face, my form, my gestures and my voice
May be reflections from a race that was,
But this I know, and knowing it rejoice,
I am myself, a part of the Great Cause.

I am a spirit Spirit should suffice,
If rightly used, to set a chained world free.
Am I not stronger than a mortal vice,
That crawled the length of some ancestral tree?"

An article by the Hon. J. M. Duell, in the March number of the North American Journal of Homœopathy, gives a thorough and interesting presentation of the legal status of mental or Christian science. Persecution, ridicule, or legislation are not going to stop the spread of this professed method of cure. New theories in human life thrive on such methods. Where there is so much smoke there is generally a little fire, and as the question of healing in all its phases properly comes into the domain of the medical profession, we should investigate and see if the fire is worth encouraging.

My opinion is, that mental healing is allied to hypnotism, suggestion and magnetic healing, all of which claim cures, and doubtless in reality make them. However, though there may be a few healers who have intelligence enough, and medical education sufficient to make their treatment of the sick safe, the great mass of them are totally ignorant of anatomy, physiology, diagnosis and every other branch a practical physician is expected to know, and what is more, they glory it. In its earlier days homœopathy had many professed doctors, practicing under its banner, whose sole knowledge of the healing art was obtained from a family work on the subject. We have changed all that, so that to-day we find the requirements of a homœopathic physician equal to those of the dominant school.

This is the real ground upon which we should attack mental healers. Laws should be passed compelling them to show as comprehensive a knowledge of the human body, and its physical laws, as the regular physician is obliged to do. Then they can treat their patients with thoughts, at so much per think, as legitimately as the twenty millionth or 1-x potency man, or the doctor who believes in heroic doses.—*American Medical Monthly*, July, 1899.

FRAGILITAS OSSIUM AMONGST WORKERS IN LUCIFER MATCH FACTORIES.

By W. F. Dearden, M.R.C.S.Eng., L.R.C.P.Lond., D.P.H.Vic.,
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When considering the dangers arising from the use of yellow phosphorus in the manufacture of lucifer matches, prominence has always been given to the liability amongst "dippers," "mixers," and "boxers" to necrosis of the jaw. The so-called "phossy jaw" is a very serious disease, but that it is the sole important pathological condition incidental to this trade is open to strong doubt. There are grounds for believing that a certain condition is brought about in the bone tissue of the body through constant exposure of the individual for a lengthy period to the action of phosphorus and its oxides, as a result of which fractures of the long bones may very easily be produced.

I have come across two "dippers" working at the same place under exactly similar conditions for about an equal number of years, each of whom has had separately and at different times both thigh bones broken in a ridiculously simple fashion

Case i.—J. S., a man, aged 46, had been in constant work as a mixer and dipper for thirty years, and had spent the last ten years at a works in my immediate neighbourhood On January 1st, 1896, he fractured his right thigh, in its upper third, through stumbling down a single step. There was evidence of old fracture of the upper third of the left femur, and I learned that such had taken place nine years previously in just as simple a manner. This man, I may state, never had any symptom of necrosis of the jaw.

Case ii.—J. R., a man aged 39, had worked as a "dipper" and "mixer" for over twenty years, the last eleven being spent at the works previously alluded to. He fractured his right femur at the junction of its middle and upper third in January 1898 through catching the tip of his right foot on a piece of thin planking lying loose in the works yard and being thrown to the ground. I ascertained that the left thigh had been fractured in an exactly similar manner two years before, the offending obstruction on that occasion being the sunken board at the edge of a bowling green. As in the former case, this man has never had symptoms of necrosis of the jaw.

That these two men, doing exactly the same work, should suffer in this singular manner I could not regard as purely accidental. I found corroboration of this view in the report to the Home Secretary on the Use of Phosphorus in the Manufacture of Lucifer Matches, which has recently been issued. Dr. Oliver there states that Dr. Magitot, of Paris, was the first to draw attention to the ease with which long bones could be fractured among workers in phosphorus, and a special note is made of the experience of Dr. Beocoorens, of Grammont, in Belgium, who "met with and treated in twenty-three years 30 cases of spontaneous fracture of the long bones caused by muscular effort effecting exclusively the lower limbs of workmen who had been employed for years in dangerous departments and who had also suffered from necrosis of the jaw." Dr. Kocher, of Berne, is mentioned as having experience of a matchmaker who broke his thighbone five times. In this country Dr. Garman, of Bow Road, is reported to have come across nine cases of fracture of the long bones of the arm or leg occurring amongst workers at this trade.

I think it may be concluded that we have sufficient presumptive evidence to show that the osseous tissues of the body generally can be so altered by the prolonged action of phosphorus or its compounds as to render them less resistent to the application of external violence.

Six months after his second fracture, my younger patient had the further ill-luck, through the agency of a wood shaving machine, to lose the distal phalanx of his right forefinger. Being fortunate enough to secure the bone

I submitted it, along with a corresponding one of the same age, which I obtained, for purposes of comparison, from a dissecting-room subject, to Mr. John Allan, of the Manchester Technical School, for chemical examination. In the following table I show Mr. Allan's results, along with the old standard analysis of Berzelius, and the more modern one of Landois and Stirling. The component parts in the latter analysis are given in the textbooks, in terms of their probable combinations, so in order to show a proper comparison, I have, by recalculation, reduced them to the primitive state in which they come out in actual estimation. It should be stated that Mr. Allan did not find any metallic phosphorus whatever in either of the samples which he analysed, also that it was only thought necessary to estimate the earthy constituents of the bones.

—	Match-makers' Bone (J. Allan).	Healthy Bone		
		J Allan.	Landois and Stirling	Berzelius
Lime	53.67	54.03	53.66	53.11
Magnesia	0.78	0.82	0.88	0.80
Phosphoric acid	40.01	39.51	39.70	36.00
Carbonic acid	5.24	5.07	4.67	7.45
Chlorine, fluorine, etc. ...	0.35	0.57	—	—
Fluorine	—	—	0.52	0.78
Soda and Sodium chloride	—	—	—	1.80
Sodium chloride	—	—	1.00	—
	100.00	100.00	99.94	99.94

From this table it is seen that the relative proportion of phosphoric acid to lime, according to Mr. Allan's analyses, is distinctly greater in the "dipper's" bone than in the healthy one, the difference amounting to nearly 1 per cent. This is not quite so well marked when we compare with Landois and Stirling; but when it is noted that this column shows more magnesia, which is generally assigned to the phosphoric acid in combination and less carbonic acid, which is supposed to combine with the lime, we find the difference more real than apparent. The same deductions are arrived at in comparing the first with the last column. The conclusion I prefer to adopt is that this excess of phosphoric acid combines with the pre-existing neutral phosphate of lime to form a slightly acid salt.

Though I am of opinion that the formation of a compound of phosphorus most probably acid phosphate of calcium, in bone is a most reasonable explanation of this peculiar condition of fragilitas ossium, before my deductions can be accepted more analyses may be required. The chemical examination of a necrotic sequestrum from a "phossy jaw" would, I think, if carefully executed, yield important results. As I know from experience the requisite material is difficult to obtain, but I trust when the opportunity does present itself to anyone it will not be lost.

The importance of investigation in this direction can readily be appreciated when it is pointed out that this chemical alteration of the bone tissue, even if it be not a necessary adjunct, must have an important bearing upon the causation of necrosis of the jaw. It can easily be understood that bone interfered with in the manner described would be less able to resist local irritation, less prone to repair after inflammation, and thus more ready to take on necrotic changes.

There is a strong modern tendency to ignore the share which constitutional changes might have in bringing about this condition in favour of the purely local action of phosphorus or phosphoric acid through the medium of a carious tooth or exposure of bone after an extraction. The recognised course of events is irritation followed by periostitis, suppuration, and ultimate necrosis. I would point out that in certain trades workpeople are exposed a great deal to the action of hydrochloric acid fumes, and their teeth suffer much in consequence. I have seen men who are under the influence of this kind of local irritation affected with the same train of symptoms, excepting the ultimate result, which would follow if the acid were phosphoric instead of hydrochloric.

Again, if we except the tuberculosis theory, which I think we may with safety, we get not the slightest support of the solely local causation from bacteriological examination of the pus of affected subjects. The bacteria, streptococci and staphylococci found are the ordinary micro-organisms associated with suppuration. Granting this general alteration in the osseous tissue of workers amongst phosphorus, it would be the only condition not common to both classes mentioned, and would thus supply the missing link in explaining the cause of what could properly be termed a severe scourge to an important industry.—*Brit. Med. Journ.*, July 29, '99.

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MUST THE DOSE OF THE HOMŒOPATHIC MEDICINE BE AS SMALL AS CAN BE PREPARED?

THE question of dose is still a disputed point, indeed, it may be said to be the only disputed point, among members of the homœopathic profession. There is, we may say, unanimity as regards the law of similars. Those who would rely upon pathological similarity, have to admit that it is not always possible to discover such similarity and that therefore under such circumstances symptomatic similarity must be sought for. And those who rely upon symptomatic similarity do not deny the value of pathological similarity if clearly available. But there is great disagreement as regards the dose of the medicine selected after the law of similars. This disagreement has divided the homœopathic profession into two opposite, we might say, hostile camps. We have on the one side practitioners whose doses range generally from the crude drug to the sixth centesimal dilution, and who do not go beyond Hahnemann's thirtieth; on the other side we have practitioners who use the thirtieths and the two hundredths as the lowest starting points, and whose souls delight in the thousandths and millionths and would soar higher if the dilutions are available. This divergence among professed homœopaths, strange as it may seem, may be traced to Hahnemann's teaching.

The Master's first homœopathically cured case, at least the first recorded case, was the celebrated one of rapidly cured colicodynia by *Veratrum Album*, which he related in Hufeland's *Journal*, Vol. iii, 1797, and which, from its importance, we transcribe below almost entire:

L——ie, a compositor, 24 years of age, lean, of a pale and earthy complexion, had worked at the printing-press a year and a half before he came to me, and then for the first time suddenly felt great pain in the left side which obliged him to keep his bed, and which after several days went away under the use of ordinary medicines. Ever since that, however, he had experienced a dull disagreeable sensation in the left hypochondrium. Some months afterwards, when he had overloaded his stomach with sweet beer-soup flavoured with caraway, he was attacked with a severe colic, the violence of which he could not express, but at the same time could not say whether it corresponded with the colicodynia which succeeded it.

The attack passed off this time, I don't know how, but he observed, that after it he could not bear certain kinds of food. The mischief increased unobserved, and the colicodynia with its distinctive symptoms took firm root.

The worst kinds of food for him were carrots, all sorts of cabbage, especially white cabbage and sour-crout, and every species of fruit, but pears in particular.

If he were so incautious as to eat any of these things within eight days after an attack which had been brought on by them, the liability was so increased that he could not eat even a morsel of a pear, for example, one or two weeks after without bringing on another severe attack.

The course of a severe attack was as follows. Four hours or four hours and a half after eating of such food—having previously felt quite well—a certain movement was felt about the umbilical region; then there took place suddenly, always at the same place, a pinching as if by pincers, but attended with the most intolerable pain which lasted half or a whole minute and each time suddenly went away with borborygmus extending to the right groin—about the region of the cœcum. When the attack was very bad the pinching came back, and the subsequent borborygmus more and more frequently, until in the worst attacks they were almost constant. There occurred also the sensation of a constriction above and below, so that flatus could pass neither upwards nor downwards. The uneasiness and pains increased from hour to hour, the abdomen swelled and became painful to the touch. Along with all this suffering, which resembled a fever, there came an inclination to vomit, with sense of constriction of the chest, the breathing was shorter and attended with more and more difficulty, cold sweat broke out, and there came on a sort of stupefaction with total exhaustion. At this period it was impossible for him to swallow a drop of liquid much less any solid food. Thus he lay stupefied and unconscious, with swollen face and protruded eyes, and without sleep for many hours; the attack of spasmodic colic gradually subsided by diminution of the pain, then followed some escape of flatus either upwards or downwards, and so the attack went off, (sometimes only after sixteen or twenty-four hours from its commencement). The strength only returned after three or four days, and thus he was again like a person in health, without any other uneasiness except the dull fixed pain before described, and general weakness and sickly appearance. He could not positively say whether this dull pain went off during the severe attacks or not, but he thought it did.

* * * * * * * * * *

As his condition required immediate help, inasmuch as the colicodynia began to appear even upon the use of the smallest quantity of vegetable food, and as all I had done at his entreaty had been of no service whatever, I determined to give him a medicine which produced very similar morbid symptoms. The similarity of the griping pain, anxiety, constriction of the chest, fever, loss of strength, &c., produced by *veratrum album* appeared to me calculated to give permanent relief.

I gave him four powders, each containing four grains, and told him to take one powder daily, but to let me know at once if any violent symptoms appeared. This he did not do. He did not return until five days thereafter. His unlimited confidence in my aid had nearly played him an awkward trick. The benefit I had promised from the powders had induced him to take two instead of one daily. After the second powder, without his having eaten anything injurious, there began an attack which he could not otherwise describe than as his spasmodic colic, or something very like it. This did not prevent him, however, from taking the third and fourth powder the following day (taking thus sixteen grains in rather less than two days), upon which, this artificial colic, if I may so speak, increased to such a dreadful extent, that, to use his own expression, he wrestled with death, covered with cold sweat and almost suffocated. He had required the remaining three days to recruit, and had returned for further directions. I reprimanded him for his imprudence, but could not avoid notwithstanding comforting him with the prospect of a good issue. The result confirmed it; under the use of tolerably good diet he regained his strength, and he has not had for half a year even a threatening of an attack, although from time to time he has eaten of the food which before was so injurious to him, but in moderation, as I impressed upon him he should. Since this event he has taken no more medicine, and no tapeworm was passed after the use of the veratrum.

The dull pain in the left hypochondrium likewise went at the same time.

The fearful aggravation in the above case must have opened Hahnemann's eyes as to the necessity of reducing the dose of a homœopathically selected remedy as will be seen from the next case that he treated two years later, in July 1799. It was a case of incipient scarlatina with the following symptoms: Severe pressive pain in the abdomen, with biting itching on the body and head, and rigor over the head and arms, paralytic stiffness of the joints; pressive headache, dimness of vision, slimy tongue, some ptyalism, hard painful swelling of the submaxillary glands, shooting pains in throat on swallowing and at other times; no thirst, pulse quick and small, breathing hurried and anxious; though very pale felt hot to the touch; complained of horripilation over the face and hairy scalp; sat leaning somewhat forwards to avoid the shooting in the abdomen which she felt most acutely when stretching or bending back the body; complained of a paralytic stiffness of the limbs with an air of the most dejected pusillanimity, and shunned all conversation, as she could only speak in a whisper; look dull and yet staring, the eyelids inordinately wide open, the face pale, features sunk. "My memory and my written collection of the peculiar effects of some medicines," says Hahnemann with reference to this case in his *Cure and Prevention of Scarlet Fever*, "furnished me with no remedy so capable of producing a counterpart of the symptoms here present, as *Belladonna*."

> I therefore gave this girl of ten years of age, who was already affected by the first symptoms of scarlet-fever, a dose of this medicine (1-432,000th part of a grain of the extract, which according to my subsequent experience is rather too large a dose). She remained quietly seated all day, without lying down; the heat of her body became but little observable; she drank but little; none of her other symptoms increased that day and no new ones occurred. She slept pretty quietly during the night, and the following morning, twenty hours after taking the medicine, most of the symptoms had disappeared without any crisis, the sore throat alone persisted, but with diminished severity, until evening, when it too went off. The following day she was lively, ate and played again, and complained of nothing. I now gave her another dose, and she remained well, perfectly well—whilst two other children of the family fell ill of bad scarlet-fever without my knowledge, whom I could only treat according to my general plan detailed above; I gave my convalescent a smaller dose of belladonna every three or four days, and she remained in perfect health.

It will be seen that in this case of scarlatina, Belladonna, attenuated to a little above the 3rd centesimal dilution, was prescribed with perfect success, the patient being restored to perfect health and continuing so. It is true that Hahnemann says that according to his subsequent experience the dose was rather too large. This may mean either that smaller doses were effective in similar cases, or that the dose here used was followed by aggravation in those cases. There can be no question, however, that in this particular case there was not only no aggravation but that the patient continued in perfect health in spite of repeated doses, so that the dose used was quite appropriate, at least in no wise inappropriate or too large.

Sixteen years later we find him employing the crude juice of a plant in the treatment of a case of gastrodynia. The case is thus narrated in the first edition of the *Materia Medica Pura*, Part ii, which appeared in 1817:

> Sch—, a washerwoman, somewhat above 40 years old, had been more than three weeks unable to pursue her avocations, when she consulted me on the 1st September 1815.
>
> 1. On any movement, especially at every step, and worst on making a false step, she has a shoot in the scrobiculus cordis, that comes, as she avers, every time from the left side.
>
> 2. When she lies she feels quite well, then she has no pain anywhere, neither in the side nor in the scrobiculus.
>
> 3. She cannot sleep after three o'clock in the morning.
>
> 4. She relishes her food, but when she has ate a little she feels sick.
>
> 5. Then the water collects in her mouth and runs out of it, like the water-brash.
>
> 6. She has frequently empty eructations after every meal.
>
> 7. Her temper is passionate, disposed to anger.—Whenever the pain is severe she is covered with perspiration.—The catamenia were quite regular a fortnight since.
>
> In other respects her health is good.

By a process of elimination which should be the model for all homœopathic practitioners he arrives at the conclusion that "Bryonia is to be preferred in this case to all other medicines as the homœopathic remedy." And he thus goes on justifying his administering the pure juice of the root of the plant:

> Now, as this woman was very robust, and the force of the disease must accordingly have been very considerable, to prevent her by its pain from doing any work, and as her vital forces, as has been observed, were not consensually affected, I gave her one of the strongest homœopathic doses, a full drop of the pure juice of bryonia root, to be taken immediately, and bade her come to me again in 48 hours. I told my friend E., who was present, that within that time the woman would be quite cured, but he, being but half a convert to homœopathy, expressed his doubts about it.

Two days afterwards he came again to ascertain the result, but the woman did not return then, and, in fact, never came back again. I could only allay the impatience of my friend by telling him her name and that of the village where she lived, about three miles off, and advising him to seek her out and ascertain for himself how she was. This he did, and her answer was: "What was the use of my going back? The very next day I was quite well, and could again commence my washing, and the day following I was as well as I am still. I am extremely obliged to the doctor, but the like of us have no time to leave off our work; and for three weeks previously my illness prevented me earning anything."

We have yet another case related in the same place (*Materia Medica Pura*, Part ii, 1st Edition) in which the twelfth centesimal dilution was used. The case was one of gastric disturbance with the following symptoms:

W—E, a weakly, pale man of 42 years, who was constantly kept by his business at his desk, came to me on the 27th December, 1815, having been already ill five days.

1. The first evening he became, without manifest cause, sick and giddy, with much eructation.
2. The following night (about 2 a.m.) sour vomiting.
3. The subsequent nights severe eructations.
4. To-day also sick eructation of fœtid and sourish taste.
5. He felt as if the food lay crude and undigested in his stomach.
6. In his head he felt vacant, hollow and confused, and as if sensitive therein.
7. The least noise was painful to him.
8. He is of a mild, soft, patient disposition.

By elimination he found that "this patient could not be cured by anything in a more easy, certain and permanent manner than by *pulsatilla*, which was accordingly given to him immediately, but on account of his weakly and delicate state only in a very minute dose, *i.e.*, half a drop of the quadrillionth of a strong drop of pulsatilla. This was done in the evening. The next day he was free of all ailments, his digestion was restored, and a week thereafter, as I was told by him, he remained free from complaint and quite well."

In none of these cases was there the slightest aggravation, and therefore the doses used could not have been inappropriate, certainly not too large. And yet Hahnemann thought fit to append the following notes to these cases in the 3rd Edition of the *Materia Medica Pura*, published in 1833. To the first case: "According to the most recent development of our new system the ingestion of a single, minutest globule moistened with the decillionth (X) potential development would have been quite adequate to effect an equally rapid and complete recovery; indeed, equally certain would have been the mere olfaction of a globule the size of a mustard seed moistened with the same dynamization, so that the drop of pure juice given by me in the above case to a robust person, should not be imitated." To the second case: "According to our present knowledge and experience the same object would have been attained by taking one of the smallest globules of pulsatilla X (decillionth potency), and with equal certainty a single olfaction of a globule the size of a mustard seed of the same potency of pulsatilla."

The "would have been" in these notes is not satisfactory from a strictly scientific point of view. It would have been more satisfactory if Hahnemann could have cited similar cases in which a globule moistened with the thirtieth potency, taken by the mouth or inhaled, had been followed by an equally rapid and complete recovery. The simple *ipse dixit*, that such and such would have been, does not convince, inasmuch as after all it may have been based upon a mere inference. Hahnemann, as all readers of his works must have observed, was not only reluctant but extremely averse to citing cases, for fear, as he used to say, of favoring routine, forgetting that one concrete case is more convincing than a thousand assertions. The four cases that we have cited, and which are almost the only ones recorded by him, goes far more to establish the law of similars and the efficacy and the necessity of the small dose, than any amount of dogmatic teaching would have done. It is, therefore, a pity that Hahnemann did not think fit to put more cases on record.

Now, even if Hahnemann had cited actual similar cases cured by the ingestion or inhalation of a single globule moistened with the 30th potency or attenuation, this fact would not have detracted from the value of the cure with a drop of the fresh juice in the one case and with half a drop of the twelfth centesimal dilution in the other. This would only show that the range of dose in such cases is very wide, that any dose within this limit might be appropriate, and that it is only repeated trials which can determine the choice of a particular dilution in a particular class of cases. Hahnemann, therefore, was perfectly right when he said (*Organon* §277): "Because a medicine, provided the dose of it was sufficiently small, is all the more salutary and almost marvellously efficacious the more accurately homœopathic its selection has been, a medicine whose selection has been accurately homœopathic must be all the more salutary the more its dose is reduced to the degree of minuteness *appropriate for a gentle remedial effect.*"

Mark the words we have italicized, "appropriate for a gentle remedial effect." The dose should be reduced not to any degree of minuteness, but "to THE degree of minuteness appropriate for a gentle remedial effect." Naturally enough, as Hahnemann saw, "here the question arises, what is this most suitable degree of minuteness for sure and gentle remedial effect; how small, in other words, must be the dose of *each individual medicine*, homœopathically selected for a case of disease, *to effect the best cure?*" The real object of reducing the dose is to secure *sure* and gentle remedial effect, that is, to effect the *best cure*, and not for the fun of reducing the dose to a surprizing degree of minuteness. Hahnemann satisfies the demands of scientific rigor and exactitude when he lays down (*Organon* §278): "To solve this problem, and to determine *for every particular medicine*, what dose of it will suffice for homœopathic therapeutic purposes and yet be so minute that the gentlest and most rapid cure may be thereby effected—to solve this problem is, as may easily be conceived, not the work of theoretical speculation; not by fine-spun reasoning, not by specious sophistry can we expect to obtain the solution of this problem. Pure experiment, careful observation, and accurate experience can alone determine this."

In thus stating the problem Hahnemann showed that he was fully cognizant of its importance, magnitude, and difficulty. But how he could achieve the astounding feat of overcoming the difficulty so as confidently to make the dogmatic assertion in the next section (279) is what we cannot comprehend: "This pure experience shows UNIVERSALLY that if the disease do not manifestly depend on a considerable deterioration of an important viscus (even though it belong to the chronic and complicated diseases), and if during the treatment all other alien medicinal influences are kept away from the patient, *the dose of the homœo-*

pathically selected remedy can never be prepared so small that it shall not be stronger than the natural disease, and shall not be able to overpower, extinguish, and cure it, at least in part, as long as it is capable of causing some though but a slight preponderance of its own symptoms over those of the disease (slight homœopathic aggravation) *immediately after its ingestion."*

Hahnemann very truly said that the dose question has to be solved for each individual medicine. He had himself proved, with the co-operation of fellow-workers, over a hundred medicines. Did he make the necessary number of experiments, carefully observed and accurately recorded, with each of these medicines in all the diseases that came under his observation for which they were homœopathically applicable, to enable him to make the sweeping assertion that their doses could not be too small for curative purposes? It is impossible that he could do so.

Is it not strange that for all substances,—some of which are in their natural state virulent poisons, others but mild and moderate disturbers of health, and others again quite inert,—the curative dose should be the same uniform minimal quantity? If so, how explain away the facts of cure with larger doses recorded by himself? In the three of the above four cases there was positively no aggravation at all, the restoration of health was complete, the cure was perfect. What ground was there then for supposing that the doses in these cases were too large and therefore should not be imitated? And why introduce the bugbear of homœopathic aggravation as a preliminary to a cure? We do not say that there may not be such aggravations in particular cases. But we must say that we have observed them under high dilutions as well as under low, and that as a general rule we do not observe them at all in true homœopathic cures.

We have seen the most violent fits of epilepsy to disappear, the most acute burning fevers to subside, the most excruciating torturing pains to be followed by soothing calm and sleep, all without the slightest aggravation, under the influence of a single drop or a globule of the well-selected remedy, and in all doses from the crude drug to the thirtieth centesimal dilution. We almost suspect that wherever there has been aggravation there has been wrong selection either of the remedy or of the dose. We have sometimes seen aggravation under a high, none under a low dilution in the same case; and we have often seen a cure effected under a lower dilution where a higher had failed.

We would have supposed that it was the hysteric fear of aggravation from too large a dose which influenced Hahnemann to lay down as a doctrine of his system that the homœopathic dose can never be too small, but for the fact that his actual practice was not in agreement with his dogmatic teaching. We have most reliable authority, that of Dr. J. Chapman, for the strange fact that Hahnemann's own box of medicines contained dilutions as low as the sixth and none higher than the thirtieth, and that in one of the boxes selected by him for a patient there was Arnica 3, Euphrasia 6, and other low dilutions. This was one of those unfortunate contradictions in his life and teaching which has involved his own grand and beneficient discovery in such a puzzle as to prevent its ready acceptance by the profession and the public, and which paved the way for the display of the strangest extravagance by some of his disciples.

PLAGUE IN CALCUTTA.

By Dr. Hem Chandra Ray Chaudhuri, L.M.S.

(Continued from p. 320 *of last number).*

Symptoms according to Regional Distribution.

Cerebral and Head Symptoms. Cephalalgia; violent, mostly frontal, of a piercing nature. Difficulty in raising the head. Sleeplessness. Stupor. Delirium, of a low muttering character, sometimes very violent, patient wants to get out of bed. In a case, at 64 Nebutala Lane, the patient would walk in his compound without consciousness. On being questioned no answer would be given. He was taken to his bed without any difficulty, by simply taking hold of his arm. He had a large glandular swelling in the right axilla. Turning of head from side to side. Tendency to go lower down the bed. If particular care was not taken he would roll down on the floor. Fear and anxiety with hydrophobic symptoms in rare cases.

Eye. Congestion of the ocular conjunctiva. At first a glistening expression, afterwards dull listlessness. Photophobia.

Ear. Dulness of hearing.

Nose. Crusts at the nostrils. Epistaxis.

Face. Anxiety, but later on a dull heavy blackish expression.

Lips. Rarely swollen, generally pale, sometimes covered with crusts.

Mouth. Dry. Bad smell; sometimes red, attended or not with tonsillitis. Difficulty of deglutition without tonsillitis in a few cases.

Tongue. At first moist but afterwards dry; fissured or cracked; sometimes red and glossy; coated white or brown in the middle; clean at the edges. Difficulty of protruding the tongue and keeping it steady. Speech, at first hurried later on thick.

Heart. Pulse varies in rate and volume. At first slightly rapid generally not more than 120 per minute, when the temperature was not more than 102. In higher temperature it goes above 124. The volume which is observed in the beginning loses that character and becomes soft with the gravity of symptoms. Thready or imperceptible. Dicrotic state is generally observed. Intermittency; serpentine course.

Lungs. Pneumonia. Bronchitis. Hæmatemesis. Cough only sometimes found.

Stomach. Nausea; vomiting of bile; of coffee coloured substance, rarely blood. Eructations and hiccough rare; pain at the epigastrium. Hæmoptysis.

Intestinal Canal and Abdomen. More constipation than diarrhœa. Diarrhœa, choleraic, bilious, mucous, dysenteric or bloody; abdomen distended.

Urinary. Urine acid; or more or less albuminous; sp. gr. from 1000 to 1025. Diminished secretion.

Extremeties. Convulsions rare; loss of muscular coordination as well as of power. Cramp. In one case the child was in the habit of getting convulsions but plague came in upon it ending in coma and death.

Fever. Temp. generally below 103; rarely 106 or 107. Shivering, thirst and pain in the body are mostly pronounced. Perspiration attended with fever. Burning sensation, wants fanning; irritability; desire for ice and cold drinks; talkativeness; restlessness; with the gravity of the case these are replaced by dullness.

Lymphatic System. Enlargement of glands of the upper part is more common than the lower; right more than the left; axillary affections generally supervene; inguinal next in order, maxillary and cervical are not unfrequent. Below Poupart's ligament swelling also appears. Pressure on the glands elicits sufficient pain even when the patient is in a comatose state.

Cutaneous. General blackish discoloration; petechiæ. Bad smell from the body. Carbuncles are rare.

General Symptoms. The sudden attack and prostration, showing depression of the forces, are common in grave cases. Dorsal decubitus, carphologia, trembling, almost from the very beginning, show the bad type of the disease. The peculiar nature of the headache, the fever and the prostration point to its unmistakable nature.

POSTMORTEM APPEARANCES.

External Signs. The peculiar bad smell of the body, the sunken eyes, discolouration of the skin, softness and shrivelled appearance of muscles, dilated pupils, delayed rigor mortis are the principal signs after death. I do not agree with General Gatacre in finding the body in a side position if not disturbed.

Brain. Brain showed extravasion of blood. Liquid blood in the sinuses. Pia mater is injected and infiltrated in many instances. Arachnoidal space contains a quantity of serous fluid. So also the ventricles. In a few cases the cerebral substances are soft and œdematous.

Heart. Pericardium sometimes contains liquid blood. Petechiæ in pericardium. Heart shows symptoms of dilatation, generally the auricles more than the ventricles, but sometimes this is reversed. All the cavities are filled with *antemortem and postmortem clots.* The veins leading to the right auricle and ventricle contain dark liquid blood. Pulmonary artery shows signs of congestion and contains also liquid blood. The valves are in a normal condition. Aorta and pulmonary veins show nothing abnormal. Infarctions are seen in some of the minute blood vessels with exudation.

Heart presents a flabby appearance. The muscular coat of the small arteries as well as that of superficial veins show want of power for contraction. The extravasation and petechiæ are due to this abnormal condition of the blood vessels.

Lungs. Those not attacked with pneumonia show hypostatic congestion. Bronchitis as an accompaniment is not a rare feature. In severe cases, exudation in visceral pleura and lungs is seen. Petechiæ in the mucous membrane of pharynx, larynx, and œsophagus is observed. The pleural cavity exudes sometimes a quantity of fluid. Pneumonia of lobular type is the characteristic of plague. Broncho-pneumonia may also be observed with it. The small patches rarely coalesce to form a large patch. The gravity of the lobular disease is far worse than the large lobar variety which takes place as secondary complication. Exudation from the patches may form enlarged glands. In the case of a medical practitioner who was attacked with pneumonic plague, the dangerous nature of the disease was altogether overlooked for the small patch that existed in his lung.

Abdomen. The intestines present an inflated appearance with petechiæ in their walls. Hæmorrhagic effusions, varying in quantity, are observed on some places in abdomen. Peritoneum in some places, not generally, shows hæmorrhagic spots, chiefly over enlarged glands.

Liver. Generally enlarged and congested with hæmorrhagic exudation. The substance is friable. Gall-bladder is generally full of fluid bile mixed with blood. The portal vein contains dark liquid blood.

Spleen. Sometimes hypertrophied with hæmorrhagic effusion in the hilum. Infarctions with exudation are observed. The Malpighian corpuscles present dark red appearance.

Stomach. Petechiæ on the external surface of the organ, involving the peritoneal coat are generally marked. All the coats are œdematous and thickened. On opening it is seen to contain grumous substance. The mucous membrane is easily peeled off by a scalp. Injected condition of the inner surface is marked more at the cardiac than at the pyloric end.

Duodenum, Jejunum, and Ilium present hæmorrhagic spots. They are found more in the last two than in the first. The small intestine as well as the large show hæmorrhagic spots. The swelling and erosion of Peyer's patches depend on the severity of diarrhœa.

Kidneys. Small dark red clots are observed in the pelvis. The ureters sometimes show hæmorrhagic effusion. The suprarenal bodies are sometimes involved.

Bladder. No abnormal appearance.

Mesenteric glands. Enlarged appearance of these glands common, with hæmorrhagic spots externally and internally.

Lymphatic system. The involved glands shew redness. On section, the circumference is congested and the centre presents a pale appearance. Hæmorrhagic effusion in the glands of the neck, as well as those of the axilla, bronchi and mediastinum are more common than inguinal.

THE DURATION OF THE DISEASE.

The septicæmic variety often runs a short existence. It does not extend over more than 7 days. The pneumonic has also a short term, generally not more than a week. The duration of the bubonic type is greater than in others. It covers a fortnight or more. The period taken varies with the degree of prostration. As a rule the pneumonic is more fatal than the septicæmic. Bubonic is less dangerous than these two.

DIAGNOSIS.

The confusion in diagnosis is a character of plague. It simulates enteric fever (typhoid), malignant malaria, venereal bubo and other lymphatic inflammations, cholera, diarrhœa, etc.

The epidemicity alone may settle the difficulty. In the beginning of an outbreak when the cases are few, the peculiar symptoms will speak for it. At first the disease begins with the bubonic type. And the frequency of buboes with fever should arouse a strong suspicion.

In my statement forwarded to the Royal Plague Commission it was observed "My apprehension is that most of the cases in Calcutta reported as plague were not plague, but ordinary bubonic fever, known in this country among Bengalis as Batshirer Jwar, or fever brought on by swelling or enlargement of glands, particularly of the inguinal region, scrotum and elephantiasis. The seasons of this fever are generally the winter and the rains."

There was considerable difficulty in differentiating ordinary bubonic fever from plague. But on careful observation cases of plague can be clearly found out. The same difficulty was met with at Bombay on the first outbreak in Mandvi, as a type of fever with glandular swelling has been for years known in Bombay. In Calcutta isolated cases produced difficulty in arriving at a clear conclusion. Subsequently there was no hesitation. The bubonic and septicæmic varieties generally prevailed. Their frequent occurrence and fatal termination pointed to one distinct disease. Objection has been raised that the septicæmic and pneumonic varieties of plague cannot have separate existence apart from those well known diseases. But an observant eye will be able to understand the difference between septicæmic plague and septicæmia in general. The one proclaims itself by its sudden attack on a supposed healthy person with high fever and other nervous symptoms. Septicæmia as a disease by itself supervenes generally on persons suffering from other diseases. The frequent occurrence of septicæmic cases points to the occurrence of plague. Septecæmia as a rule is of rare occurrence.

Before the outbreak of plague in Calcutta, I had not seen more than half a dozen of cases of septicæmia within a period of more than twenty years. But after its attack the cases were of frequent occurrence.

In pneumonia, the difference between lobular and lobar types will generally differentiate the disease. With pneumonic plague glandular enlargements are not of unfrequent occurrence.

About the diagnosis of plague Dr. Dickson writes:

"The diagnosis of plague is not difficult, for no other malady presents an assemblage of symptoms so well marked and so significant in its true nature. In fact, no other idiopathic fever, attacking a multitude of persons at the same time, is characterised by glandular swellings, by carbuncles, and those severe manifestations of the nervous, sanguineous, and bilious symptoms, which declare themselves in an attack of the *plague*."

A few physicians, basing their views on the intercurrent phenomena manifested in some cases of plague, imagined that this disease might be merely a variety of *pernicious fevers* engendered by *malarial poison;* but Dr. Dickson cites three facts, which conclusively subvert this hypothesis.

"1. No intermission has even been observed in the symptoms of plague, not even in those intercurrent phenomena which arise from complications of the nervous, circulating, and assimilative organs.

"2. There is no instance on record of an attack of plague having been *cut short by the administration of Sulphate of Quinine.*

"3. The striking difference which marks *the expression of the countenance* and the *general aspect* presented by a person suffering from an attack of *pernicious fever*, and those of one suffering from the *plague*. Coming up to a patient suffering from an attack of pernicious fever, you are struck with the gravity of the case and the danger threatening his life. The very reverse of this meets your eye when you see, for the first time, a case of plague. Even the worst instances of this malady are apt to deceive an *inexperienced* physician, and make him fancy that the case is free from danger, when in reality the patient has only a few hours to live. The first instance of plague seen by Dr. Cabiadis did not seem to him to be one of an alarming nature. The patient looked stupefied, or rather as if intoxicated, and did not answer readily the questions put to him. He had vomited blood, and had a very swollen bubo in the right axilla, but the pulse and temperature were normal. The patient *died a few hours after Dr. Cabiadis' visit.*"

THE PREDISPOSING AND PROTECTIVE INFLUENCES.

No race, creed or colour has proved immune against the disease. Cleanliness and observance of rules of health and diet afford a protection against all diseases. Plague is not an exception to this rule. Drs. Cabiadis, Scheube and others uphold this view. The males are far more attacked than the females, both being exposed to the same influence. The ages most liable to the influence of plague are from 20 to 35. The period of greatest development of the organism acts as incentive. It is so with enteric fever, but has some difference. Enteric fever in children is a very rare occurrence, almost unknown. From plague, the children do not escape, though their proportion is small compared with that of adults.

Protection from a second attack is not ensured by a first. The most important fact observed in connection with plague is that it insidiously sets in during the course of other diseases. Excepting the predisposition caused by open wounds and sores in the cutaneous surface of the body, there are other diseases which create a tendency to be attacked by it. I have seen plague to ensue during an attack of malarious fever, and pelvic cellulitis, and terminating fatally. The attending physician might be the cause of the spread of the disease in some instances. How plague is disseminated is still a study. The modern study of bacteriology has placed many facts on an entirely new basis.

(To be continued).

EDITOR'S NOTES.

Staircases without Handrails.

Staircases without handrails are stated by the coroner to be a frequent source of death and there are thousands of houses in Birmingham in this condition. This is a point to which attention may properly be called.—*Lancet*, Aug. 19, 1899.

Four Cases of Monstrosity in the same Family.

Héstle (*Virginia Med. Semi-Monthly*, June 23rd, 1899) narrates the extraordinary history of a mulatto woman, well formed and healthy, as was also her husband, who gave birth to four male infants (the results of the first, fourth, fifth, and six pregnancies) in all of whom the hands and feet were attached immediately to the body (phocomelous?), and all wanting the external ear. Her female infants were normal, and are still alive. There was a maternal impression (fright from an opossum) in each of the pregnancies which ended in the birth of a monstrosity.—*Brit. Med, Journ.*, 1899.

Death Under Chloroform.

A child, 15 weeks old, a patient at the Children's Hospital, was the subject of a coroner's inquest on August 3rd. The child having to undergo an operation was put under the influence of chloroform and died in two minutes. At the inquest Mr. W. Thomas stated that since the opening of the Children's Hospital 14,500 operations under anæsthetics had been performed and that this was the first death. This is a meritorious record, showing that extreme care had always been used and also that children possess more than an average immunity to the effects of chloroform.—*Lancet*, Aug. 19, '99.

New Incision for the Exposure of the Bile Ducts.

Bevan (*Annals of Surgery*, July, 1899) objects to the incisions generally employed for exposing the gall bladder, on the ground that these do not give room for extensive work unless they are made very long, and that when they are made very long they are apt to result in hernia. The incision introduced and recommended in this paper consists of a primary portion and two extensions. The primary part which can be employed for exploration or simple cholecystotomy is an *ſ*-shaped incision, from 3 to 4 inches in length, along or through the outer border of the rectus muscle. The extended portions formed by carrying on the curved extremities of the primary incision are added when required. These can be made from an inch to 3 inches in length, as the thickness of the abdominal wall, and the character of the operation demand. When complete this incision gives much freer access to the gall bladder and the bile ducts than can be attained by any other form of incision. By a division of the rectus in part and of the external and internal oblique, and the transversalis muscles, the margins of the incision can be widely separated without tension.—*Brit. Med. Journ.*, Sept. 9, 1899.

Vicarious Menstruation from the Ear.

Lermoyez (*Progrès Médical*, July 15th, 1899) reports a case where a young girl who had never menstruated began, three years before observation, to bleed from the right ear regularly every month. The flow was preceded by headache and general lassitude; the blood was clear and non-coagulable. About two years later the normal menstrual flow began, and was steadily replacing the periodical hæmorrhages from the ear, which now miss one or two periods. The membrana tympani of the right ear was free from any trace of perforation. The right auditory meatus was very vascular, and its cutaneous vessels evidently dilated. There were no general symptoms of hysteria, so usual in vicarious menstruation, but the right tympanum and the meatus were abnormally insensitive, whilst there was a certain degree of auditory anæsthesia on the same side, conditions associated with hysteria.—*Brit. Med. Journ.*, Aug. 19, 1899.

Wound of the Heart.

J. O. Rush (*Therapeutic Gazette*, July 15th) says that on August 11th, 1897, he was hurriedly called to see a coloured man, 45 years old, 6ft. high, and weighing about 185 lbs., who had been stabbed some thirty or forty minutes before his arrival. At every heart beat there gushed from a small wound directly below the left nipple, between the fifth and sixth ribs, a wave of blood. There was another wound 10 inches long, extending from the angle of the eleventh rib downward and forward towards the linea alba, and through the external oblique and transversalis muscles. On passing the index finger into the small wound lying over the heart, a cut could be distinctly felt in the wall of this viscus, apparently entering the right ventricle. The external bleeding was checked, and the patient was stimulated with strychnine and nitroglycerine hypodermically. While the long wound was being sutured the patient regained consciousness; he called him by the name, and gave an intelligent account of the conditions which led up to the assault made upon him. He lived for about two and a-half hours after receiving his wound. The necropsy showed that the diagnosis as to the position of the heart wound was correct, and that it was large enough to admit the little finger.—*Brit. Med. Journ.*, Aug. 12, 1899.

Acute Iodine Poisoning.

Franz (*Wein. klin. Woch.*, No. 23, 1899) reports a fatal case of iodine poisoning. The patient, a man aged 70, suffered from arteriosclerosis, chronic interstitial nephritis, and hypertrophy of the left ventricle. Ten years before he contracted severe syphilis. On December 3rd and 4th he was given 15 grains of sodium iodide. This was followed by iodism and iodine acne. On the same day appeared sub-conjunctival petechiæ, swelling of the mucous membrane of the nose and throat, dyspnœa and swelling of both testicles. On December 7th the nares ulcerated; the urine contained albumen, hyaline and granular casts. No iodine was found in the urine. On December

10th there occurred inflammatory infiltrations in the skin of the face and trunk; a phagedænic ulcer formed on the lower lip; the skin of the trunk and extremeties was covered with small abscesses and vesicles containing turbid yellowish-green serum. This condition was followed by double hydrothorax, pulmonary œdema, and death. At the necropsy the following changes were found: pemphigus of the skin and mucous membrane of the œsophagus, chronic interstitial nephritis, hypertrophy and dilatation of the heart, serofibrinous pericarditis, double hydrothorax, œdema of brain and lungs, chronic perisplenitis, and commencing cirrhosis of the liver. The explanation of the case is that owing to the diseased state of the kidneys the iodine was not eliminated, and the amount retained was sufficient to cause death in such a broken-down subject.—*Brit. Med. Journ.*, Aug. 19, 1899.

Death of Professor Bunsen.

The Bunsen burner and the Bunsen battery are appliances so familiar, and spectrum analysis a method of research which has been so completely worked into the fabric of chemistry and astronomy, that it is almost startling to be reminded that until Wednesday morning last the man who gave these appliances and that method to science was still living in Heidelberg. Few events could perhaps bring home to the mind more vividly the enormous strides which science has made. Bunsen was born in 1811, graduated at Göttingen in 1831, became Professor of Chemistry at Cassel in 1836, at Marburg in 1838, and at Breslau in 1850. In 1852 he was called to Heidelberg as Professor of Experimental Chemistry, and retained that chair, in spite of an invitation to Berlin, until 1889, when he resigned. The invention of the gas burner, so familiar to every student of chemistry, was due to no accident, but was the result of a profound knowledge of the conditions of burning of mixtures of gas and air. His greatest achievements, however, were connected with the study of light, and his elaboration of the system of spectrum analysis placed in the hands of chemists and astronomers a method of analysis of extreme beauty and accuracy which has been most fruitful in important discoveries. He was not only himself a great investigator, but a stimulating teacher. Most of the leading chemists of all countries have worked as young men in his laboratory, and all regarded him not only with admiration but with affection. In 1858 he was elected a Foreign Fellow of the Royal Society, which awarded him a Copley medal in 1860, and in 1877 made to him and to Kirchhoff, his fellow worker in the study of the spectrum, the first award of the Davy medal.—*Brit. Med. Journ.*, Aug. 19, 1899.

The Colour of Blinds.

The remarkable and widely-varying properties of the elementary colours which compose white light suggest that the employment of screens as in the blinds placed over our windows should be founded on a scientific basis. Our knowledge of the properties of each individual section of the spectrum is not exact, but this much we do know, that the rays of least refrangibility, the red rays, are without direct chemical effects, they occur at the heat end of the spectrum. On the other hand, the rays of highest refrangibility contain the violet rays which chemically are exceedingly active. It is these rays which are concerned in photography and doubtless also in the great processes of vegetable nutrition and growth. The object of blinds is, of course, twofold—to keep a room cool and to screen out some of the light, so as to avoid the bleaching of colouring materials of the carpets and furniture. At the same time sufficient light must be admitted so that the occupant may see without difficulty. What, then, is the best colour for this purpose? Since light exerts the peculiar action due to the actinic rays which materially and wholesomely affect the air of a dwelling room care should obviously be taken not to exclude all the rays that are so concerned. Thus ruby or orange red material would be contra-indicated. Abundance of light is inimical to the life of micro-organisms so that a material in some shape of a compromise should be selected. The best for this purpose is probably a delicately ochre-coloured fabric. This would screen part of the active light rays and if of a fair thickness the greater part of the heat rays, while admitting sufficient active rays to allow of a wholesome effect upon the room and its surroundings. Venetian blinds do not allow of the graduation, which is desirable, of the tone of light that may be adjusted with cloth fabric. As is well known, exclusively red light has been used as a therapeutic agent, and apparently with encouraging results, in measles.—*Lancet*, August 19, 1899.

Delirium Cordis.

Feige (*Therap. Monats.*, February, 1899) records the case of a man, aged 30, who came to him on January 28th, complaining of shortness of breath. He had been suddenly attacked with acute dyspnœa, which continued up to the time when the author saw him. The patient's face was cyanotic, respiration 40, and the pulse 200 per minute. On examination, the left side of the heart was found to be enormously enlarged, and a loud systolic murmur was heard all over the cardiac area. The patient was a delicate-looking man, and the author is of opinion that sexual excess was the chief cause of his dilated heart. He had had previous attacks of dyspnœa when a boy, so that it is possible he may have had some forms of congenital heart disease. Feige ordered digitalis and rest in bed. The next day there was no improvement. A morphine injection was given. On January 30th chloral hydrate was tried, and another morphine injection, but this had no effect on the distressing symptoms. The patient was obliged to sit up in bed day and night; his face remained cyanotic, and the lungs showed signs of commencing œdema. After a consultation it was resolved to try digitalis once more. In addition the constant current was applied over the cardiac area three times a day. The anode was placed over the situation of the vagus in the neck, whilst the kathode was applied over the cardiac area. The current was continued for half an hour at a time. The next day, after a quarter of an hour's galvanism, the patient suddenly felt much better, his face became a natural colour, and the dyspnœa entirely vanished. The pulse, dropped to 80. The left ventricle had slightly diminished in size. It is possible that the galvanism had a beneficial effect in this particular case. The patient gradually improved. After seven months the author examined the heart again, and found that the upper border reached to the third intercostal space. The right border extended to the left edge of the sternum, and the apex beat was in the fifth space of the nipple line. The first sound was absent over the cardiac area, but was heard in the second right intercostal space. The second sound was loud, and slapping. Any unusual exertion brought on an attack of dyspnœa, but not so severe as the one described.—*Brit. Med. Journ.*, Aug. 12, 1899.

Diet in Liver Disease.

Emil Schwarz (*Centralbl. f. d. ges. Therapie*, Aug., 1899) inquires how far in disease of the liver the food can be selected so that the system shall suffer as little as possible from the loss in hepatic activity, and also whether the progress of the disease may be directly influenced by the patient's mode of life. The influences exerted by the liver upon albuminous, starchy, and fatty foods, and upon the final products of nitrogenous metabolism and digestion, are not independent processes, but are the final results—all we can at present understand of a complicated process taking place in the liver cell. In every parenchymatous lesion all these influences suffer simultaneously, if not equally, but is only the most severe cases of acute disease, with rapid destruction of the parenchyma (acute yellow atrophy, phosphorus poisoning), that lead to intoxication, with the end products of metabolism or digestion. In chronic disease metabolism suffers little till the final stages. The increase of ammonia in the urine depends, not on hepatic insufficiency, but on the abnormal quantity of the acids in the system, due to deranged digestion. Schwarz sees no reason in the condition of the parenchyma to diminish either nitrogenous or amylaceous food, nor, unless there be lack of bile in the bowel (any form of jaundice), the amount of fat. But the digestive tract is involved by catarrhal processes, due primarily to the deleterious ingesta which cause the hepatic disease (for example, alcohol) and secondarily to the disturbed circulation which often even in early stages leads to hæmorrhage, œsophageal, gastric, or intestinal; resorption is delayed by the portal congestion—the surface available for it is reduced by shortening of the intestine (as as much as one half) and atrophy owing to periphlebitis of the portal system and chronic, peritonitis and a stagnation of ingesta leads to increasing autointoxication. Everything indicates that the food should be capable of rapid conversion into an absorbable condition, should be highly nutritious in small quantity, and should leave refuse after digestion, and Schwarz recommends that in every case with serious hepatic symptoms a trial at all events should be made with a rigid milk diet. Even serious degenerative processes are not necessarily progressive, and by excluding further injury, permanent improvement may be obtained. Abstinence from alcohol must be a primary condition in any case capable of improvement, and as recent work has proved the influence of caffein upon the glycogen in the liver, tea and coffee are to be avoided.—*Brit. Med. Journ.*, Sept. 9, 1899.

The Bacteriologist's Lament.

I AM a firm believer in
The science of bacteriology.
To tell its horrors I'll begin,
And this I hope needs no apology.

I dare not drink a cooling vase
Of water, for I know 'twill dose us
With horrible microbes, such as
Bacillus coli and typhosus.

To quaff a cup fresh from the cow
Of milk I know would be too silly,
For all the experts tell us how
It harbours tubercle bacilli.

The fruit I used to think so nice
Has lost its flavour once so charming,
I'll eat it not at any price,
I know now with microbes it's swarming.

I dare not give myself the treat
To kiss my girl—except by proxy,
For that mouth I once thought so sweet
I'm told abounds in lethal cocci.

My beard, of which I was so vain
I'll have to shave one of these days,
For beards bacteria contain
Enough to poison ten cobayes.

Milk, water, fruit, till boiled, I must
For ever from me put away;
My sweetheart's mouth I dare not trust
Till sterilized by Lister's spray.

Bacteriology has made
The terrors of existence great,
But has done naught, I am afraid,
Those of diseases to abate.

—*Homœopathic World*, Aug. 1, 1899.

Alcohol Neuritis in a Child.

In the *Journal of Nervous and Mental Diseases* for June, 1899, Dr. George W. Jacoby records the case of a boy, four and a half years old, suffering from symptoms of alcoholic paralysis. He had been in apparent good health until four weeks prior to the report, at which time he had had severe colic without vomiting or constipation. His gait had been a little unsteady in walking and subsequently his left knee-joint had become swollen. It was found that the boy had received from about half to one tumblerful of beer daily ever since the age of six months. On examination there was extensor paralysis of the hands and legs (foot drop and wrist-drop), with the reaction of degeneration in all the muscles. There was no sensory disturbance. This case emphasises the cumulative effects of small doses of a poison long continued. The nerve trunks in this case were painful and tender to touch (neuritis), but there was no general hyperæsthesia of the skin. In the discussion which followed the demonstration of this case (at the New York Neurological Society, April 4th, 1899), Dr. Joseph Collins said that he had had two similar cases under observation in the last two years. One of these was that of a child, aged seven years, who had been in the habit of drinking beer. This patient had not completely recovered his muscular power which had been partially paralysed during the first attack when the second attack came on. Both his cases presented a remarkable pallor of the cutaneous surfaces as compared with redness of the mucous membranes. Dr. Jacoby in his remarks quoted some recent statistics regarding the habitual use of alcohol in a large German city. The municipal authorities of the city had undertaken an investigation among the school-children with the result that out of 100 children it was found that 16 drank no milk. 25 per cent. of the children had never tasted brandy but had habitually drunk beer or wine and 8 per cent. had received their daily potion of brandy "to make them strong." He thought that there was an almost equally large percentage of children among the German and Irish population of New York who were habitually given alcoholic drinks by their parents, with the result that many pathological nervous conditions were brought about. There could be no doubt about the cumulative and deleterious effects of alcohol when thus taken by children.—*Lancet*, August 19, 1899.

Sunstroke and the Pathological Changes Produced by it in the Brain.

Much of the pathology of sunstroke has hitherto been matter of speculation. The first studies of changes produced by its agency in the brain cells which were carried out with the aid of modern technique we owe to Van Gieson and Lambert. In three cases these observers found throughout the central nervous system extensive changes in the nerve cells and affecting mainly the chromatic bodies of Nissl. The changes consisted in partial or total disintegration of these bodies or in alterations in their form and diminution in their number. Other changes were also observed in the nuclei of the nerve cells. These various changes were regarded as evidences of an acute parenchymatous degeneration of the neurons resulting from the action of an autogenous poison which was supposed to be the basis of the symptoms in sunstroke. In a recent contribution Dr. James

Ewing of Columbia University, New York, gives a valuable record of three cases of sunstroke in which the nervous system was examined by Nissl's method. In the first of these cases the patient was a male, aged 45 years, who was found unconscious in the street from sunstroke. He was brought to hospital unconscious, comatose, and cyanotic, with stertorous breathing, dilated pupils, and feeble pulse. He passed his stools involuntarily and the temperature was found to be 110°F. The patient died in the ice pack 15 minutes after admission. The necropsy was held 18 hours after death and showed intense congestion of the viscera and an unusual fluidity of blood. The brain and spinal cord were firm. Microscopical examination with Nissl's method revealed the following conditions. In the spinal cord the anterior cornu cells showed characteristic changes, appearing of a diffusely stained and pale-blue colour. The nucleoli were enormously swollen and pale and were surrounded by a number (from six to 10) of large deeply-staining granules. Under a high power it could be seen that some cells still showed traces of Nissl's bodies either of the original form and size or swollen and fused together or evenly and minutely subdivided, but invariably very pale. Many nerve cells appeared to be entirely devoid of chromatic bodies. The nuclear membrane was often invisible (the changes in the majority of the nerve cells were indistinguishable from those found by Dr. Ewing in artificial pyrexia produced in rabbits by exposure to heated air). In the medulla nearly all the nerve cells showed the more advanced changes noted in the spinal cord. Here many cells were entirely colourless. Some of the Purkinje cells of the cerebellum were but slightly altered; many contained only a few slender and very pale chromatic masses and some were devoid of chromatic bodies. As regards the cerebral cortex the usual nuclear changes were very prominent and the chromatolytic changes were advanced, most of the cells failing to show distinct chromatic bodies or network. In the posterior spinal ganglia the chromatic bodies in most of the cells were pale and minutely subdivided, while many were absolutely colourless. The nucleoli of these cells were much swollen. In the second case—viz., that of a male, aged 38 years, there was a previous attack of sunstroke for which he had been successfully treated a week before. The present attack rendered him unconscious and he fell from a waggon. He was admitted to hospital with the usual symptoms and with a temperature of 109·6°F. With treatment in repeated ice packs the patient partially rallied, the temperature during 24 hours ranging between 97·4° and 105°, but he finally died. The necropsy in this case disclose but slight lesions in the bulbo-spinal cord and cerebrum, while marked changes were found only in the cerebellum. This case served to show that high temperature alone was inadequate to produce the change in question.—*Lancet*, August 12, 1899.

CLINICAL RECORD.

Indian.

EIGHTEEN CASES OF PLAGUE.

By H. E. Deane, Major, R.A.M.C.

Case I.

Andaloo (female), age 9. Admitted 24th December, 1898. Ill three days with fever, severe rigors, and pain and swelling in right axilla.

On admission, T. 101·2°. P. 116. R. 46. Drowsy; unable to sit up or stand. Tongue coated and red at tip and margins. For the next few days her temperature ranged 99°—104°. P. 100—132. The pain in bubo was very severe; on Dec. 29, she had great difficulty in moving her head; buboes had appeared on both sides of the neck, which increased in size; difficulty in swallowing came on, the swelling increased in the axilla and was spreading down the right arm, with great tenderness of the arm.

Up to this she had been taking naja internally.

On evening of 30th there was difficulty of breathing and swallowing and I blistered the skin over the swelling on right side of neck (her head was fixed towards the left shoulder), and applied a tincture of crotalus 1/1000 to the surface, and gave apis m. 5 every hour.

The next morning the pain was much less, though there was no difference in the size of the swelling. Breathing was easier, and the child had not quite such a distressed look.

The swelling of right arm had spread to the elbow and was very tender.

Apis was continued every two hours.

On Dec. 31, temperature rose to 104·2°; but the next day, Jan. 1, 1899, she looked brighter than she had hitherto been, and there was no danger as regards interference with breathing or swallowing. The cellulitis of the arm rapidly subsided. On Jan. 3, it is noted that the swelling was most marked over left angle of jaw. The further progress does not bear on any particular point. The right cervical bubo suppurated, and she was discharged Feb. 14 quite well.

Case II.

Mooneumkaty (female), age 18. Admitted 2nd January, 1899, at 4-50 p.m. Says fever set in yesterday, but had a swelling in left femoral region three days ago.

T. 104°. P. 140. R. 40.

Headache. Eyes injected. Drowsy. Does not answer questions properly. Rolls her head about.

Apis, m. 2, every hour.

Jan. 3. T. 104·6°. P. 140. R. 36. Does not roll her head so much as last night.

3-15 p.m. Inclined to muttering delirium, and will not answer questions.

Crotalus 1/1000, m. 3, two hours by mouth.

Jan. 4. T. 101·4°. P. 88. R. 36. Seems better.

Jan. 5., 3-15 p.m. Is in a state of low muttering delirium, constantly talking to herself, picking the bed clothes, spits out her medicine.

Sensibility to external impressions is lost. Her condition is one not to be distinguished from delirium tremens.

Hyoscyamus, m. 10, every two hours.

Jan. 6. T. 100·6°. Slept a little last night, still delirious, but seems clearer in her mind.

E. T. 98·4°. Answers questions, but is restless, and after answering a question lapses into muttering.

Jan. 7. Conscious this morning.

Jan. 8. Restlessness less, puts out her tongue when asked. Hyoscyamus, m. 5, every three hours.

E. Slept soundly to-day.

Jan. 9. T. 99·4°. Delirium stopped, and from this date, though she was very weak for some days, she made a good recovery.

The bubo suppurated, and was opened on 12th February.

At first I had small hopes of this woman's recovery but the action of the hyoscyamus was most satisfactory; and from observation of similar cases, I think this a drug which finds a great place in treating those cases of plague presenting the symptoms calling for it.

CASE III.

Lutchmee (female), age 25. Admitted 21st January, 1899. Has been ill four days, with swelling in right femoral region first, then fever, slight cough. Bubo excessively tender. T. 98·4°. P. 102. R. 26. Heart sounds muffled. Pulse soft and compressible.

Lachesis 1/1000, m. 5, two hours.

Jan. 22. Severe pain in the head.

R. 26. P. 74. E. T. 99·8°.

Jan. 24. Last evening T. 101·8°. No sleep, rigors, severe headache.

R. 40. P. 116. T. 104·6°.

In evening T. 105°; slight hacking cough; pulse very soft, and sphygmogram shows want of tone in vessels.

Naja 1/1000, m. 3, hypodermically.

In two hours' time T. 102°. The injections repeated twice in the night.

Jan. 25. T. 98·4°. P. 96. R. 32. Bubo still very tender. A sphygmogram shows a marked difference to last night's; the tendency to dicrotism has gone, and there is tone in the vessels.

From this date, the bubo subsided without suppuration, her general condition never caused more anxiety, and she was discharged Feb. 14.

CASE IV.

Andiamneah (female), age 6. Admitted 21st January 1899. Daughter of Case III. Said to have been ill six days with fever; illness setting in with pain and swelling of right side of neck. T. 105°. R. 48. P. 144.

Headache, delirium set in a few hours after admission, when she was lying with her head retracted, and very restless and irritable, giving rise to a strong suspicion of meningitis setting in. There was harsh breathing at back of left axilla.

Apis mellifica (tincture), m. 5, every hour, ordered at 4 p.m. when she was in the above state.

Jan. 22. T. 100·4°. R. 38. P. 124. No sleep last night. Has been rolling her head this morning.

E. T. 99·4°. Slept from 10 a. m. to 6 p.m.

Jan. 23. T. 98·4°. R. 36. P. 80. A marked improvement in her general condition; retraction of head and extreme irritability have gone. From this date she made an uninterrupted recovery. Bubo suppurated, and was opened on Jan. 28.

Discharged Feb. 14.

CASE V.

Lutchmee (female), aged 35. Admitted 24th January, 1899. Lost two children from plague a month ago. Says she was all right this morning early, but at 11 a.m. got fever.

Her eyes were congested, slight headache only, pulse scarcely perceptible, and heart sounds very faint. T. 103·2°. P. 132. R. 34.

Naja 1/1000, m. 5, hypodermically, to be repeated once during the night.

Jan. 25. T. 99·6°. P. 80, easily counted. R. 30. Heart sounds much improved. Albumen in urine.

Jan. 26. Eyes much less congested. E. T. 101°.

Jan. 28. No albumen.

After this, the case is unimportant.

Discharged Feb. 4.

CASE VI.

Fatma Bee (female), age 60. Admitted 25th January, 1899. Attended funeral of her daughter, dead from plague, nine days ago. Been ill two days.

Complains now of pain all over her body, severe headache, and great thirst. Has a small but very tender bubo in left groin. Tongue clean. T. 102°. P. 124, small and weak. Skin hot and pungent to the touch.

Jan. 25, 4-30 p.m. R. 40.

Naja 1/1000, m. 5, hypodermically.

7 p.m. T. 103·2°. P. 112. R. 32. Repeat injection.

9. p.m. Pulse fuller.

Repeat injection at 10 p.m., and continue by mouth every two hours.

Jan. 26. T. 104°. P. 110. R. 40. Slept fairly well and headache gone.

E. restless and tossing her head about.

Naja, m. 10, hypodermically.

Jan. 27. T. 100·8°. P. 84. R. 28. Looks clearer and brighter.

The bubo subsided without suppuration.

Discharged Feb. 12.

CASE VII.

Kishtamah (female), age 14. Admitted 28th January, 1899. Ill five days. Set in with rigors. Noticed swelling in right femoral region two days ago. Had severe headache, and pain in bubo at first. Tongue is moist. Pulse soft and compressible. First sound of heart short. T. 100·6°. P. 120. R. 32.

Jan. 28. Naja, 1/1,000, m. 10, hypodermically.

2-30 p.m. P. 100. R. 28. Had some sleep after the injection.

Jan. 29. T. 98·6°. P. 100. R. 26.

Bubo still very tender.

Jan. 31. Bubo much less tender, after this it subsided without suppuration.

Discharged well, Feb. 14.

CASE VIII.

Oblappah (male), age 30. Admitted 31st January, 1899. Says that two days ago fever set in with rigors. Had just come in from Yellakanka (little way out from Bangalore), where his father had died of plague four days before. He came to Bangalore the day after his father's death. On admission eyes congested, more especially the left. Tongue coated white. Heart sounds masked by lungs' sounds. Tremor of body.

T. 102·4°. P. 136. No buboes.

Naja 1/1000, m. 10, hypodermically.

Jan. 31, noon. T. 103·4°. R. 50. P. 130.

Repeat injection at 3 and 4 p.m.

5 p.m. T. 104°. R. 54. P. 110, very weak.

Breathing laboured and noisy, but no adventitious sounds.

Died at 2 a.m., Feb. 1.

CASE IX.

Moonian (male), age 35. Admitted 2nd February, 1899. He has well-marked symptoms of leprosy, thickened ears and tubercles on forehead; dry, scaly and shiny skin, and toes and nails of both feet affected. Says he had diarrhœa yesterday and several watery motions before admission. Swelling in left thigh seven days ago, followed, he says, by rigors and fevers. Skin hot and dry, drowsy.

T. 103·2°. P. 136. R. 36. First sound of heart short. Pulse weak and compressible.

Crotalus, 1/1000, m. 10, hypodermically.

10 p.m. T. 103°. P. 126. R. 26.

Repeat injection and m. 10, by mouth, if awake, every two hours.

Feb. 3. T. 101°. P. 108. R. 24. Says he feels better. Bubo is large and tender. Severe pain in it during night.

E. T. 103·4°. P. 112. R. 32.

Feb. 4. T. 97·6°. P. 96. R. 22.

E. T. 103·8°. P. 112. R. 36. Pulse fuller.

5 p.m. Repeat injection.

6-30 p.m. T. 101·2°. P. 120. R. 28.

Feb. 5. T. 97·2°. P. 94. R. 20.

From this date, his convalescence has been very satisfactory. The bubo was poulticed on Feb. 4, 1899, and incised on Feb. 9, 1899, evacuating pus. The wound is closing fast now, on Feb. 19.

CASE X.

Venkatee (female), age 35. Admitted 5th February, 1899, with her husband, and the cases were counterparts of each other in a remarkable degree (see Case XI.). The daughter died five days ago of plague, but had no bubo. On admission, T. 103·4°. R. 52. P. 120, and almost running. Eyes congested. Heart's action arhythmical.

Says she has been ill five days. *No buboes.*

Mental condition quite clear. Burning sensation in eyes and soles of feet.

Tongue furred and flabby.

She was evidently dying, but I gave her crotalus 1/1000, m. 10, hypodermically, with no benefit, and she died two hours after admission.

CASE XI.

Gungadoo (male), age 35. Husband of Case X. Admitted 5th February, 1899. Ill five days; set in with rigors; now has headache; pulse almost running; heart sounds inaudible.

T. 103·4° R. 42. P. 120.

Eyes congested. *No buboes.*

Crotalus 1/1000, m. 10, hypodermically, at 11-40 a.m. and 12-45 p.m.

At 1-30 p.m. his pulse was a little better, not so running; and at 4-30 p.m. heart sounds were audible.

Crotalus, m. 5, by mouth, ½ hour.

6 p.m. T. rose to 105·4°. Hiccough set in, but had no pain; skin dry and burning hot. Mind clear. Pulseless.

Died about midnight.

CASE XII.

Chinnamak (female), age 23. Admitted 5th February, 1899. Father died of plague in Yellakanka about fifteen days ago. Says she had fever with rigors for one day about ten days ago, and a swelling appeared below lobe of right ear this morning.

Complains of pain on swallowing. Pulse soft and compressible. First sound of heart muffled. T. 100°. P. 130. R. 28.

Naja 1/1000, m. 10, hypodermically, and m. 5, by mouth, every two hours after.

Feb. 6. T. 99·4°. P. 104. R. 30. First sound of heart more pronounced. Pain in bubo, which is very tender, but smaller.

From this time the temperature was evidently connected with the painful condition of the bubo, which was poulticed and small doses of belladonna given. The symptoms subsided rapidly, and the bubo resolved without suppuration.

Discharged well, Feb. 18.

CASE XIII.

Bai Ammiah (female), age 30. Admitted 7th February, 1899. States fever set in with rigors yesterday, and noticed a swelling in left thigh this morning.

Eyes slightly congested. Large bubo in right femoral region.

No plague in her house, but says she visited a plague case a week ago.

She is said to have been confined a month ago.

T. 105°. P. 150. R. 44.

12-45 p.m. Naja 1/500, m. 5, hypodermically. Repeat at 1-45 p.m.

2 p.m. T. 105°. P. 148. R. 40.

8 p.m. P. 128. R. 42. Inclined to sleep.

Feb. 8. T. 104°. P. 156. R. 44. Slept well. Tongue thickly coated white. Pulse very soft.

Feb. 9. From this time her condition deteriorated. At 3 p.m. pulse was thready and could not be counted, and there was low quiet delirium. Temperature remained 104°—105°.

She had three injections of naja 1/500, and she passed a fair night.

Feb. 10. T. 103°. P. 103. R. 44. Bladder much distended. Catheter passed.

Naja 1/500, m. 10, hypodermically.

Heart sounds are stronger, and not so muffled. There is a dark sanious discharge from vagina.

E. T. 102°.

Feb. 11. T. 100°. Still delirious and general tremor of the whole body, which is so often a symptom of dangerous import.

Hyoscyamus, m. 10, every two hours. Paralysis of bladder persists.

Feb. 13. T. 103°. P. 140. R. 40. Delirium ceased. Tongue beginning to clean at tip. The muscular tremor still exists. Ordered yesterday small doses of opium alternately with hyoscyamus.

Feb. 14. T. 103°. Had good sleep last night. The muscular tremor much less. The fur on tongue is breaking up. No delirium.

Feb. 15. T. 101·2°. Bubo smaller. Says she feels better. Talks rationally.

Feb. 16. T. 102°. Still bladder paralysis. Tongue cleaning rapidly

P. 110. R. 44. No lung symptoms. Muscular tremor quite ceased.

I think it pertinent, as illustrating the condition the patient was in, to state that a visiting medical officer, who had previously seen the case, expressed surprise at finding her alive.

There seems some tenderness over uterine region. The vaginal discharge changed to a red colour and now ceased.

I saw this woman after giving up charge of the hospital, and found her convalescent. The bladder paralysis had ceased entirely.

CASE XIV.

Subha Row (male), age 10. Admitted 8th February, 1899, from the railway station, having come in from Ooregaum Gold Mines, where he is said to have been taken ill with fever last night.

T. 105·2°. P. 156, small. R. 38. Tongue coated white. No cough. Buboes in right inguinal and femoral regions. Eyes slightly congested.

3-30 p.m. Naja 1/500, m. 10, hypodermically.

9 p.m. T. 104·2°. P. 150. R. 42.

Feb. 9. T. 103·6°. P. 100. R. 42. Had a fair night. Takes nourishment. He was ordered belladonna and arsenic alternately last night; but in the afternoon of this date he became delirious, vomiting and diarrhœa set in, during which two round worms were voided through the mouth; the heart became arhythmical and he rapidly sank, and died at 5-30 p.m.

CASE XV.

Santhagu Row (male), age 40. Admitted 9th February, 1899.

Said to have been taken ill yesterday with fever, and a bubo appeared last evening in left femoral region.

T. 101·4°. R. 34. Pulse imperceptible. Quite conscious. Eyes congested. Speech thick and dragging. Tongue white, and red at tip. Body cool. Bubo is large and tender. No cough.

Naja 1/500, m. 10.

In a few hours cough set in, with delirium, and speech was an exact representation of a man under the influence of alcohol.

Injection repeated at 6 p.m., but he failed to rally at all, and died at midnight.

CASE XVI.

Munna Bai (female), age 8. Admitted 9th February, 1899. Her father was admitted with plague this morning. The child is said to have been taken ill this morning.

T. 105·2°. P. 140. R. 40. Skin hot and dry.

Naja 1/500, m. 10, hypodermically.

4 p.m. Sleeping. T. 105·8°. R. 28. P. 132, small, and not easy to count.

Repeat injection 7 p.m.

Feb. 10. T. 102·4°. Slept well all night. Looks better. First sound of heart faint; second rather sharp.

3 p.m. In a state of singing delirium. T. 105°. P. 156. R. 24. Heart sounds are better marked.

Feb. 11. A bubo, small and very tender, appeared in right axilla.

From 10th to 16th she was treated with small doses of arsenic or opium; the delirium ceased on 14th. On night of 12th she had sound sleep; on 13th bubo was noted as larger, and on evening of 16th her temperature 104·8°. P. 104. She looked heavy and dull, and would not answer questions. The bubo was very tender and the tissues over and round the gland seemed more affected and infiltrated than the gland.

Apis, m. 5, every two hours.

Feb. 17. T. 98°. Quite conscious and puts out her tongue when asked. Bubo seems less tender.

I saw this child again at the beginning of March, after I had left the hospital, and found her convalescent.

CASE XVII.

Yenkama (male), age 10. Admitted 10th February, 1899. Had fever three days and a swelling below angle of right jaw, which, he says, preceded his fever.

Tongue white.

T. 100·2°. P. 138. R. 24.

Bubo prevents him opening his mouth properly and is very tender.

Naja 1/500, m. 10, hypodermically.

E. T. 103·8°. P. 120. R. 36. Was frightened this evening by a man dying in the ward.

Given small doses of opium.

Feb. 11. T. 99°. Pain in bubo.

Feb. 12. T. 97°. Bubo rapidly subsiding. Slept well.

After this he rapidly improved, and was discharged Feb. 17.

CASE XVIII.*

Moonegurapah (male), age 30. Admitted 13th February, 1899, at 10-45 a.m. Eyes very congested and face flushed, in a semi-conscious state, and cannot be roused. Skin dry, not very hot. Is said to have vomited a green fluid on the way to hospital.

T. 102·4°. P. 96, small and compressible. R. 28.

Small bubo in left femoral region, pressure on which makes him flinch.

Naja 1/500, m. 10, hypodermically.

11-45 a.m. Repeat.

3-45 p.m. Repeat.

5 p.m. T. 104°. Restless. Forehead puckered. Eyes open and fixed. Rolls his head, tremor of neck muscles.

Pulse fuller, but soft and compressible.

Midnight. T. 102°.

Feb. 14. No sleep in the night; takes food with difficulty; can be roused to put his tongue out, which is white on dorsum, red at tip and edges. Eyes much less congested. Body tremulous.

5 p.m. Died.—*Monthly Homœopathic Review*, September 1899.

[NOTE.—The naja used in these cases was diluted with glycerine in the proportions mentioned, and was of Major Deane's own preparation—EDS.]

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* Though this case was a desparate one from the first, the slight improvement in his pulse and mental condition gave a faint hope of well doing, but it was not fulfilled.

Gleanings from Contemporary Literature.

VARIOUS ASPECTS OF THE OPEN-AIR TREATMENT OF PHTHISIS.

By Alfred Hillier, B.A., M.D.,

Late President South African Medical Congress.

The principles which this mode of treatment recognises as of paramount importance are not entirely expressed in the term "Open-air Treatment." But the term, at least, has this advantage over "General Measures," "Hygiene," or any other that can well be used: it conveys, in an unmistakable manner, what is the vital and absolutely essential condition required, without which everything else is as naught. For the cure, as well as for the prevention of tuberculosis, first and foremost, transcending all other measures as the sky transcends the loftiest habitation, comes pure air. Accompanying this, and in a large measure the result of this, are abundant feeding, rendered possible by the robust appetite which fresh air engenders, and repose, that plentiful untroubled sleep and rest which the natural and simple animal life procures. It is the tissues of the animal man on which the tubercle bacillus preys and flourishes; it is the animal man which must be fortified against it. Departure by man from the natural animal life to the artificial indoor life of civilisation renders the introduction and establishment of tuberculosis a possible disaster. Return to the natural animal life best combats the effects of this disaster, should it occur. Before considering in its full application and detail all that this mode of treatment entails in the form of practical measures—measures which, to be effective and thorough, require that minute and careful instructions should be given to, and acted on by, the consumptive—it will be well to review such facts as have already been collected in relation to the etiology of tuberculosis in animals and man which unmistakably point to the necessity of this treatment, if the cure of a tuberculous condition sufficiently advanced to be clinically recognisable is to be obtained. Amongst the lower animals tuberculosis—as far as is known—is a rare thing under natural conditions. Thus Nocard states that, although both rabbits and guinea-pigs are excellent reagents for the disease and take it quickly and violently when inoculated, tuberculosis is very rarely found among them in a state of nature. What is of even more interest from the curative point of view is a series of experiments performed by Trudeau in America, showing that rabbits inoculated with tuberculosis confined in a damp, dark place, rapidly succumb, while others turned out to run wild recover or develop only slight lesions. Nocard also states that monkeys, giraffes, antelopes, llamas, gazelles, etc., in zoological gardens are decimated by the disease, and in regard to the incidence of the disease among animals in the Zoological Gardens in London Sir Samuel Wilks gave a remarkable illustration of the effect of open air. He said that the idea used to be to keep up a high temperature in the houses of certain animals from the tropics. "Now they let these animals go out even in winter into the fresh air, and the mortality is considerably less."

Among cattle, as was shown by the Reports of the Royal Commissions appointed to consider tuberculosis, it is among the closely confined milch cows that tuberculosis is principally found, whereas among the cows run in the open air in Jersey it scarcely exists. Even the abundant feeding of the stalled ox is not enough to protect him from the disease; and as a matter of fact, he is far more liable to it than his fellow, fed on a half starvation diet over some barren moorland, but who is continuously in the open air.

Among sheep—which are practically never housed—tuberculosis is rare.

From the animal world, then, the evidence as to the effect of open air in preventing and also curing tuberculosis, is clear.

Among mankind what are the conditions which principally determine the incidence of tuberculosis?

Overcrowding, and an atmosphere contaminated with respiratory impurities, are, as has been shown, those most conducive to the successful establishment of the disease. As a preventive measure, the provision of the *opposite* of these conditions is the most valuable. With regard to the tubercle bacillus itself in relation to open air, it has been shown by Ransome and others that the conditions most favourable to its continued existence and virulence outside the body are darkness, filth, damp and foul air; to its destruction, light, preferably sunshine, and pure air.

From this review of facts, with reference to tuberculosis, established by careful bacteriological research and statistical compilation, it is perfectly obvious that the open air treatment of tuberculosis—and all that it implies—is no mere empiricism. It is neither the passing nostrum of some fashionable physician, nor one of a number of stock prescriptions in use at some public hospital. It is a recognition of certain truths in relation to the intimate pathology of the disease, and a practical expression in curative medicine of that recognition.

This form of treatment is generally associated with, and is most beneficial in cases of, pulmonary tuberculosis—especially those in the earlier stages—but it is also undoubtedly of value in other forms of the disease, and may be undergone with the greatest advantage by scrofulous children. Of the singular effect which open air has upon the ordinary cold or catarrh I have myself had a striking experience. Several years ago, while I was practising in South Africa, it was my duty to proceed at short notice with a column of mounted troops, a forced march of several hundred miles, sent to the relief of forces engaged on the Kaffir frontier. I had at the time a particularly aggravating catarrh, and remarked, as we started, to a veteran campaigner that I was afraid sleeping in the veldt would not improve it. He laughed, and replied that sleeping out of doors a man never caught cold, and further, that he immediately lost any cold he might have, provided, he added, that the head was always kept warm. A woollen night-cap was part of our kit. In twenty-four hours, a cold which had worried me for a fortnight, and which under ordinary circumstances would have remained with me for at least another fortnight, had totally disappeared. Months of camp and waggon life in the open air have convinced me that my veteran friend's statement about catarrh is absolutely true. My own experience in this respect is entirely borne out by that at different open-air sanatoria. Under ordinary circumstances—and with frequency in general hospitals—the consumptive is troubled with attacks of catarrh. At open-air sanatoria these attacks very seldom occur.

THE ACTION OF PURE AIR ON THE CONSUMPTIVE.

The beneficial and curative effect on the phthisical patient of this mode of treatment is now widely recognised, and the statistics from different open-air sanatoria both in Germany and our own country abundantly testify to it. What, then, is more precisely the action which pure air has? It is true it is largely destructive to the life of the tubercle bacillus outside the body, but can it be held to have any direct action on the tubercle bacillus when once buried within the tissues of the host? It is difficult to see how it could act directly in this way, nor am I aware of any evidence which could fairly be held to suggest that it does. By helping to destroy all tubercle bacilli with which the consumptive may be brought in contact outside the body, whether lodged there from his own sputum or from any other source, the risk of being invaded with fresh doses of virulent organisms is diminished by the pure air surrounding him, but on the bacilli actually within the tissues the action is indirect through the tissues themselves. The action is on the soil containing the seed, not directly on the seed itself, when once that seed is sown. But what is the action of pure air on that soil; how, more specifically, are the tissues affected? At one time it was supposed that the diminution of oxygen and the increase of carbonic acid in an atmosphere vitiated by respiration were the elements most noxious in that atmosphere to the person breathing it. The experiments of recent investigators have thrown considerable doubt on that explanation. As stated, the action of pure air is directly on the tissues, and through them indirectly upon the microbe. Pure air cannot destroy the microbe buried in the tissues, but it can so intensify and invigorate the cellular elements of those tissues as to enable them to do so, and this it does, not merely by its oxygen or by its comparative freedom from carbonic acid, but by virtue of its freedom from the organic impurities which respired air contains; those impurities thrown off among other effete or waste products of combustion within the body, through the channel of the expired breath. Provide the cells of the tissues with pure air—a normal requirement—and the fungus—the tubercle bacillus—is either checked or destroyed in its growth upon them. But on the other hand, as manure, an effete animal product, put into land causes the vegetable seed sown in it to flourish—so do these respiratory organic impurities (another form of manure) or effete animal products, reinhaled into the lungs and re-absorbed by the tissues, cause the vegetable fungus tubercle bacillus to flourish. That this is a scientific fact and not mere metaphor the researches of a number of men show. Thus Daremberg, a French physician and himself a sufferer from phthisis cured by open air treatment, has been at considerable pains in his admirable little book to explain the *rationale* of its effect upon the consumptive. He says the confined air of closed chambers is unhealthy, and it is desirable to know why it is injurious to the sick and especially to the phthisical. Is it, as was long supposed, because it contains too little oxygen? Leblanc showed that the air of a lecture room containing 1,000 cubic metres of air and 1,000 persons had only lost during an hour 1 per cent. of oxygen. On the other hand, Paul Bert has shown that respirable air can lose, without inconveniencing persons breathing it, 15 per cent. of oxygen; thus the ill effect upon the phthisical subject of confined air is not due to the diminution of this gas. This observation of Paul Bert's has recently received striking confirmation in the experiments of Mosso, an Italian physiologist, made with rarefied air at high altitudes.

The next point for consideration is whether the accumulation of carbonic acid exhaled from the lungs during respiration has the noxious influence observed. The researches of Reiset have shown that the external air contains 0·3 per thousand of carbonic acid. Oertel has found 0·8 per thousand of this gas in a brewery and also in a lecture hall.

But as Pettenkofer has been able to breathe, without any ill effect, for an hour, an atmosphere containing 10 per thousand of carbonic acid, and as Brown-Séquard and d'Arsonval are stated to have breathed, without being "incommoded," mixed gases containing 20 parts of carbonic acid to 60 parts of air, it is certain that the ill effect of bad air on the phthisical subject is not due to the accumulation of carbonic acid gas. Gavarret contributed to the solution of this problem. He placed animals under a bell glass, and although he replaced the oxygen as soon as it was absorbed, and caused the carbonic acid to be absorbed as soon as it was produced, the animals died. Hammond, of New York, in repeating this experiment, showed that air rendered unbreathable in this manner, when forced through a solution of permanganate of potash, discoloured it because it contained a large quantity of organic matter. Several German physiologists also saw that this asphyxiating air contains a notable quantity of organic substances.

Brown-Sèquard and d'Arsonval at length went far to show that the toxic qualities of confined respired air are due to the expired vapour containing organic matter. They collected in a refrigerating apparatus the vapours contained in air expired by a man, and they injected the liquid thus collected under the skin of rabbits and guinea-pigs. Both rabbits and guinea-pigs succumbed to these injections. These experiments show that the lung exhales vapours charged with poison. The assimilation of food and the constant changes in the tissues fill the body with toxic substances. These are eliminated in the fæces, the urine, the sweat, and pulmonary exhalations. We do not reabsorb the poisons eliminated by the kidneys or the skin. "Why," asks Daremberg, "should we reabsorb poisons exhaled from the pulmonary surface by breathing an air already breathed?"

No further evidence as to the scientific basis for this method of treatment need be adduced. But Daremberg's own personal experience of the efficacy of this treatment in consumption deserves briefly quoting. "No one," he writes, "knows the happiness of the consumptive who quits his tainted chamber to live 'au grand air,' if he has not himself experienced the benefits of this change. In 1867, after having passed several months between the four walls of a small room in Paris, I arrived on the French Mediterranean coast, and after the advice of Henri Bennet, I stretched myself out all day in the sun, at night I lay with my window open. . . . As Voltaire says, 'The hope of recovery is already half a recovery.' Soon my powers revived; I could walk, make small excursions, find pleasure in existence. I discovered that the sun of my life had not yet set. I saw it rise each morning with delight, and each day linger too short a time to allow me to enjoy to the full the pure air, the bright light, the blue sea, the heavens, the earth, everything. It is good to feel oneself reborn. . . . .

"This life in pure air, night and day, stimulates the appetite, improves the digestion, suppresses the fits of coughing, facilitates expectoration and the respiratory movements, invites calm sleep. And when the consumptive has an access of evening temperature that access passes almost unperceived by him. Generally both fever and sweats gradually disappear."

The first object being the purest air obtainable, it is obvious that the more the patient can live in the open air the better, and accordingly the consumptive should so regulate his life as to spend it almost entirely out of doors, and when indoors, in rooms with windows widely open. Rest being a necessary adjunct to pure air, many of the hours spent out of doors must necessarily be spent in a sitting or recumbent position, the latter being by far the best. The chair of all others most suitable for this purpose is the long deck-chair—half-chair, half-couch—so familiar to all ocean travellers. The chair should be placed so as to be sheltered from strong wind or excessive heat from the sun. Mere cold in the sense of a low degree of temperature—providing the patient be kept warm with rugs and footwarmers—has no deleterious effect, and this treatment is carried out with the most satisfactory results both at Davos in Switzerland and in Russia.

The continuous fresh air soon induces appetite and sleep, essential factors in the cure. Regulations as to amount of exercise, the treatment of febrile cases, etc., must be given according to the individual requirements of each case. These and many other points of detail require careful consideration, but space will not allow of their discussion here. They will all be dealt with at length in a book which I am at present preparing.

WIND, RAIN, AND FOG.

To open-air life, wind, rain, and fog are frequently incidental. The consumptive can soon be taught to brave them all. In doing this, however, reason should be exercised, and while the patient learns to abandon chest protectors and other swaddling clothes in which he was wont to be clad—and ceases to fly at the least sign of damp ground or a shower of rain, he must not go to the other extreme and become a reckless fanatic—such as some popular writers would apparently have him. A varied life—at high altitudes ; on the sea coast ; and at sea—two months of which were spent on a campaign through the rainy season with a flying column on the Kaffir frontier, and six months of which were spent entirely in the open air, or occasionally only under canvas—has led me to certain conclusions with reference to the open air life and its effect under different conditions of weather both upon the healthy and the sick. With the consumptive first introduced to the open-air life, as with the amateur traveller, there is apt to be a certain confusion of mind between "open air" and "exposure." The two things are quite distinct, and the necessity of being explicit on certain practical points has been impressed upon me both as an old campaigner and a physician. Thus clothing should be light, but sufficiently warm, preferably of woollen fabric both in underclothing and dress. And the individual—resting in the open air—whether he be a soldier who bivouacs under the canopy of heaven or the consumptive who reposes in a *Liege-halle* or before a widely open window, requires some sort of a protection on his head, unless the weather be unusually warm.

With regard to wind, it must be borne in mind that it has a more cooling effect on the body than a still atmosphere 30° or 40° lower in temperature. The mistral of the Riviera, the trade winds, the gales of the "roaring forties," the tormenting half-gale of the high veldt in South Africa, and the rough breezes on our own hills, often occur with a registrably fairly high temperature, but any patient sitting, driving, or even walking slowly in such a wind must have clothing of sufficient warmth. For the patient actually resting out of doors, shelter from strong wind is highly important. Anything which irritates or distresses a patient is to be avoided, and to provide an artificial shelter out of doors—where a natural one is not forthcoming—innumerable contrivances have been devised. The German *Liege-halle*, the summer-house, the small marquee or garden tent, canvas screens, glass screens, all may serve, and all be used according to varying local and other conditions, so long as they protect the patient, while resting, from wind, excessive heat, or rain, and at the same time enable him to breathe abundant pure air.

Rain need not alarm the consumptive undergoing open-air treatment, nor will it always be necessary to give up the usual walk ; still, experience has led me to recognise that exposure to wet combined with cold is a menace to health, and I have seen hardy Colonial troopers prostrated with dysentery as a result of it. As an indifference to wet clothes is sometimes urged somewhat recklessly by amateur writers upon the consumptive undergoing open-air treatment, the following are practical instructions on this subject which I am in the habit of giving. As a patient becomes gradually accustomed to the out-of-door life, and is able to take short excursions, he need not desist because of a shower of rain, but the light overcoat and the umbrella need not be despised, and the patient must see that he does not get cold as well as wet. Damp clothes while a man is walking, or riding, or rowing, or taking any form of exercise which serves to keep him warm, do no harm ; if on sitting down wet in cold weather he covers himself with rug or ulster the chances are he may remain for an hour or so and still take no harm. But if wet through in, say, an ordinary tweed suit, he sits down uncovered in an open vehicle, a cold railway carriage, a *Liege-halle*, or anywhere else until he is chilled, he will not by so doing improve his pulmonary condition, and he will run a considerable risk of other complications arising. On this point the traditions of the English hunting-field and the Scotch moor are perfectly sound. A man may hunt all day in the rain without an overcoat - provided the coat he does wear, combined with the exercise he gets, are sufficient to keep him fairly warm. A man may crawl about in morass or burn all day deer-stalking on a wet mountain side, every stitch he wears may be sodden, but if after the day's sport is over he either walk, or ride a Highland pony home, he will be none the worse for it, and a dry rub or a bath and a change are all he requires. But if the unwary sportsman, wet, weary and warm, decide to drive home some ten or twelve miles in an open vehicle, with neither rug nor ulster, on a chill October evening, he incurs risk. Two cases illustrating this came under my notice recently—in one a drive of this sort brought on an attack of pleurisy, in the other a sharp attack of rheumatism. What endangers the health of a vigorous man accustomed to out-of-door life cannot be borne without risk by the consumptive. The amateur writer on the "open-air treatment" is like the amateur traveller described by Younghusband ; he is characterised by a "passion for unnecessary hardships."

Fog is not an insuperable objection, but is an undesirable quality in an atmosphere for the phthisical, although fog is better than respiratory impurity. A moist atmosphere has the effect of diminishing the quantity of vapour exhaled in the breath, and so checks the removal of the organic impurities contained in that vapour, which are eliminated from the blood by the process of respiration. In the dry air the breath vapour with its organic impurities is freely exhaled from the lung, and this largely accounts for the invigorating effect of a dry atmosphere ; and the languor so pronounced in low coast districts within the tropics is partly due to a checking of the evaporation from both lungs and skin, and a partial accumulation within the body of those effete products which are eliminated in a normal atmosphere by that evaporation. For these reasons, in choosing a site for a sanatorium or other dwelling for a consumptive patient, a spot should be selected which is as much above any local fog that may arise as possible. It must also be borne in mind that a moisture-laden atmosphere abstracts much more heat from the body than a dry one. At the same time, fog does occur at many of the German sanatoria, and need not deter patients from taking their usual exercise unless exceptionally thick.

VENTILATION AND DRAUGHTS.

The open-air life soon teaches the consumptive patient to regard draughts as a bogey of bygone days ; at the same time, the regulation of air supply in a patient's room requires so arranging as to avoid actual strong draught as much as possible : It is one thing to sit under a hedge, or protected by a deck shelter on the weather side on board ship ; it is another to have a narrow cold draught blowing directly on to a patient in a room. Both conditions provide pure air, the one with comfort and advantage, the other with discomfort and possible disadvantage. Very frequently widely opened windows cause less draught than windows only slightly open, but a little skill and thought in arranging the air supply for a room is sometimes necessary. Thus in winter there is no more effectual way of thoroughly airing a room than that originally recommended by Florence Nightingale for the sick chamber, a bright fire and an open window. A free draught is established from window to fireplace, and the patient, either in bed or on a couch, must be placed out of the line of that draught. By draught, I, of course, do not mean the merest suspicion of fresh air in a room which is the interpretation attached to the term by many people, who place sandbags to every crevice. For the atmosphere to remain pure, free movement of currents of air in a room is essential, and in all cold weather the consumptive either reclining or sleeping in such a room with windows well open will require both warm clothing and a cap to protect the head. The soldier in a bivouac, who sleeps in the open air, wears a warm night-cap, the consumptive who freely admits a winter's atmosphere to his bedroom equally requires one. Daremberg very wisely lays special stress on this.

If there be no fire in a room, and the outside atmosphere is still, the windows of the patient should be widely opened night and day. If wind blows directly into a room, a closing of one window and opening of another, or the partial closing of a window, manipulation of a screen, removal of the bed, or half a dozen little resources which a skilled doctor or nurse can devise, or a patient himself arrange, may be used, so as to avoid a direct strong draught.

On the control of air admitted into the patient's room, and other practical details, I recently, while on a visit to the famous little Nordrach Sanatorium in the Black Forest, had the advantage of an interview with Dr. Walther, the resident physician there. He said that if he found himself called upon to interfere at all with the windows in his patients' rooms, it was generally to induce them to close, or partially close a window, in exceptionally boisterous weather. The patient once thoroughly acquainted with the open-air life becomes an enthusiast, and occasionally requires a little restraint. During cold winter months the room of a patient may require artificially heating ; in this case the temperature should not be raised above 50° to 55° F., as the contrast with the outer air is too great. The extent to which admission of the outer air to a room lowers the temperature is much less than is generally supposed, unless an actual strong current of outer air is passed through the chamber. Bennet, writing of freely ventilated bedrooms in the Riviera, says that between the temperature of a room hermetically sealed and one ventilated, the difference is only one of 2° or 3°. On a cold winter's night in England the water may freeze in the water-jug of the stuffiest bedroom ; the temperature of that same bedroom with a window partly open would not be more than a few degrees lower. Thus Berthenson says that in the Hospital of the Croix Rouge, at

St. Petersburg, when the outside temperature is 20° C. below zero, the temperature of the rooms being 17° C. above zero, a free system of ventilation only lowered the temperature 1° in four hours.

To confuse heat with foul air and cold with fresh air are popular errors. A chamber may be fetid below freezing point and contain perfectly pure air at a temperature of 90° F.

OCEAN VOYAGES, HIGH ALTITUDES, DRY CLIMATES,

have all been eulogised in turn as remedies for phthisis. I have had phthisical patients under my care and observation for considerable periods of time under all these conditions, and the conclusion I have come to is that the benefit derived in every case is chiefly dependent on the extent to which the patient is continuously kept in pure air. Thus, a "sea voyage" is often ordered for the consumptive (not infrequently by physicians who have never made an ocean voyage themselves), and the close cabin air and the discomfort of the ship often aggravate rather than relieve the disease. A deck-cabin, the ports of which can always be open during a fine weather voyage, on a ship which is not too crowded, offers to an intelligent consumptive patient admirable conditions. But these conditions are seldom all fulfilled, and the very opposite not infrequently obtain. One case I had which furnished me with an object lesson I shall never forget. On a voyage from South Africa, while in the tropics on a Cape mail steamer, I was asked to see a consumptive passenger in consultation with the ship's surgeon. A stiff trade wind was blowing, and all the ports of the lower cabins on the weather side had to be closed. In one of these—far aft—in immediate proximity to the screw, I found the patient. The ship was rolling violently, and the vibrations of the screw were felt with painful intensity. The port was carefully screwed up, the cabin was close and hot. The patient was completing his voyage, He was *in extremis*, and even if it had been practicable, it would have been useless at that stage to move him on to the wind-swept deck by day, only to be carried back in a heavy sea to the cabin for the night. The ship was full, no other cabin was available. He died in the course of a few days and was buried at sea, twenty-four hours before the ship reached Plymouth.

A "sea voyage" is an empty phrase which may mean anything. A yacht given up to the comfort of a consumptive owner makes an excellent floating sanatorium, but no ordinary mail steamer carrying her complement of passengers can compete for a moment with the sanatoria now available on land. Among sailors I have seen numerous cases of phthisis, and two French naval surgeons have specially called attention to the number of deaths from phthisis among sailors in the French navy. The fact is, a man may obtain a comparatively pure atmosphere in the heart of a city if he opens his windows ; he may poison himself with foul air, as I have found from actual experience, in a hut on the high Alps, or a stuffy ship's cabin in mid-Atlantic.

Of "High Altitudes" and "Dry Climates" the same broadly may be said. Pure air first and everything else afterwards. At the same time, I believe both altitude and dryness of atmosphere have much more claim to consideration as desirable conditions for the phthisical subject than the vague lottery described as a "sea voyage." Having lived for several years at altitudes of from 4 to 6,000 feet in a sub-tropical climate in South Africa, the stimulating and invigorating effect of the mountain air—though no cooler than that of the coast—has distinctly impressed me in its effect both on the healthy and on the consumptive. Many consumptives, after a month or two on the coast in South Africa, where the air is often heavy with moisture, on finding they are no better, migrate up-country into a higher and drier atmosphere, and immediately begin to improve. Of this numerous instances have come under my notice, although the open-air life on the coast and up-country had been followed to the same extent in both cases. I am convinced that the hot, heavily moisture-laden atmosphere of low districts in the tropics and sub-tropics is extremely bad for consumptives—quite as bad, if not worse even than the fogs of our own country, as at high temperatures much more moisture is suspended in the air. The *rationale* of the ill effects of fog upon the consumptive was described above, and what was said is equally true of tropical atmospheres saturated with moisture, although the temperature may prevent the formation of actual fog. It must be borne in mind, as a point of practical importance, that a clear atmosphere at a temperature of 90° F. may contain more moisture than a foggy one at 40° F. Sir Hermann Weber, in his paper on "Climate and Sea Voyages" read at Berlin, specially drew attention to the fallacy of supposing a warm climate was better for consumption than a cold one, and instanced Lima, the capital of Peru, 12° from the Equator, where consumption is very prevalent.

SANATORIA FOR THE TREATMENT OF CONSUMPTION.

Climates of every variety have at one time and another been recommended for consumption—dry climates and moist ones; high altitudes and the sea board; warm climates and cold ones; the ocean and the desert; the Equator and the Poles. The underlying truth is at length being recognised. The virtue of these different resorts is the open air life. It is true the open air in Germany and England may not, owing to the uncertainties of climate, be as agreeable as that of Davos, the Riviera, or Egypt. But it has this advantage—it is obtainable by German and English consumptives in their own countries, and experience has now shown that results quite equalling those of various vaunted Southern resorts are obtainable in sanatoria both in Germany and England.

For results obtained in British sanatoria reference may be made to those published by Burton-Fanning, Philip, Calwell, Thurnam, and Dr. Jane Walker in the July number of The Practitioner. In a sanatorium specially established and conducted for the treatment of consumptives, it is obviously possible to combine all the desirable conditions with an elimination of undesirable conditions in the open-air method of treatment. And this more than compensates for the problematical superiority of climates foreign to either of these countries.

The lottery of the sea voyage already described is only equalled by the uncertainty as to accommodation and food obtainable in such countries, for instance, as South Africa or Egypt.

A visit to Nordrach, Falkenstein, and other sanatoria, as well as the results obtained at these institutions and the excellent British results referred to, and an intimate experience of the uncertain conditions which surround consumptives on a sea voyage or in various different health resorts have convinced me that the ideal and best form of open-air treatment is to be obtained in a well-conducted sanatorium. Another argument has been not unfairly urged in favour of the open-air sanatorium treatment in the country in which a patient has subsequently to live. It is highly desirable that after arrest or cure has been established in a case of phthisis, the patient should not immediately go off to a less clement climate. Many instances of this sort have come under my notice in the case of consumptives who have derived considerable advantage from the sunshine and upcountry out-of-door life in South Africa, but who have broken down again on having to face an English winter. The man who has braved wind and weather in an English or German sanatorium will more readily stay as much as possible out of doors, and open his windows when he gets back to everyday life at home, than one who has just returned from the Mediterranean or South Africa.

As a contrast to the open-air treatment, consider for a moment the surroundings of a patient treated in his own chamber on the old lines.

Michel Peter has described the scene in terse and decided language. He says: "I know nothing more hideously fetid than the bed chamber of a rich consumptive. It is a spot carefully enclosed, where both air and hope are alike forbidden to enter; there are sandbags to doors, sandbags to windows, thick curtains enveloping the bed, where the unfortunate consumptive welters in perspiration, and an atmosphere twenty times respired twenty times already contaminated by contact with his own diseased lungs."

To remedy the evils and inevitably fatal results of such conditions as these—accompanied though they be with the most regular doses of the drug latest in favour—the modern sanatorium has come into existence.—*Practitioner*, August 1899.

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SUMMARIES OF LECTURES ON THE HOMŒOPATHIC TREATMENT OF TROPICAL DISEASES.

WE have great pleasure in reproducing from the *Liverpool Journal of Commerce* the following summaries of the lectures that were delivered at the Hahnemann Hospital, Liverpool, during September last, on the Homœopathic Treatment of Tropical Diseases. Five of these lectures, it will be observed, were delivered by Dr. J. W. Hayward, and one (the third) by Dr. Mahony. We know that as bare summaries they "cannot give adequately the matter or arguments of the lectures," each of which occupied a full hour's time. But we doubt not that they are sufficiently suggestive to be useful to Indian practitioners of Homœopathy.

FIRST LECTURE.

AT the Hahnemann Hospital, Hope Street, yesterday, DR. HAYWARD, SEN., delivered the first of what is intended to be a course of lectures on "The Nature and Prevention of Malarial Fevers, and Artificial Immunity." It was explained by the lecturer that the course has special reference to the missionaries, nurses, and others who go out to tropical and subtropical countries, and are necessarily exposed to the dangers of the climate. Those dangers to life and health, he said, arose from the poisonous marsh miasma called malaria, which induced such diseases as fever, dysentery, malarial cachexia, spleen and liver complaints, and anæmia. The most deadly form of fever in Africa is called black water fever, corresponding to yellow fever in America and jungle fever in India. Schools had been established for the study of tropical diseases, the first movement being made in Liverpool, thanks to the initiative of Messrs. Elder, Dempster and Co. And rightly so, because the frequent and intimate trade connection of Liverpool with tropical countries had made the merchants, shippers, and sailors of Liverpool painfully familiar with the pestilential nature of tropical climates, especially Africa. The ordinary medical treatment of the worst forms of malarial fever was practically powerless; in fact, nearly all medicines had been abandoned, except quinine in enormous doses. At the School of Tropical Diseases in connection with University College and the Royal Southern Hospital, the nature, pathology, and bacteriology of malarial diseases were being taught in a manner not to be surpassed elsewhere. But the treatment there taught is, of course, the old, and in the worst forms, unsuccessful dosing with quinine. It was the knowledge of this "single medicine" treatment being so taught, and proving inefficacious, that led the medical board of the Hahnemann Hospital to open a course of instruction with the object of supplementing and completing the instructions given at the School of Tropical Disease, not in the least with any idea of competing with the School, but to occupy quite different ground.

Homœopathic Practitioners were not confined to the use of quinine or medicines, recommended on the authority of some great name in the profession. Nature provided the remedies, namely, those which acted on the parts diseased in a way similar to that in which the disease itself acted. Most Europeans were susceptible to malarial fever in tropical countries, and it was found that dark complexioned people were the least susceptible, florid people more, and blonde people most. Only persons in the prime of life should go out to the West Coast of Africa, and none for the first time after 42 years of age. With good health, and with only little natural susceptibility, and by gradual exposure and prolonged residence, some people became more or less acclimatised, and, like the natives, somewhat resistant. But they were the exceptions, and it behoved white missionaries and nurses to keep away from the neighbourhood of swamps and foul river banks, and from where virgin soil is being newly turned up and to avoid mosquitoes and flies as much as possible. The lecturer also counselled the avoidance of fatigue, over-heating, chills, and anything that upsets the digestive organs; and no water should be drunk except it had been first boiled and filtered, and all food should be kept covered. He recommended the use of disinfectants repulsive to mosquitoes and flies. Quinine was not the best preventive, because it required to be repeated in large doses, and gradually lost its efficacy; in addition, it set up febrile symptoms of a dangerous character. But successful treatment of malarial fevers must vary with the varying manifestations, and the consideration of that head of the subject was best left over till the next meeting, when the lecturer said, he proposed to take up the matter of treatment, and hold out the hope of a great diminution in the suffering and mortality from these diseases. He would then review briefly the symptoms, physiology, pathology, and treatment of intermittent, remittent, and black water fevers, and the best means of prevention, management, and medicinal treatment.

SECOND AND THIRD LECTURES.

In our issue of the 20th (Sept.) we noticed the first of a course of lectures on the above subject. The second lecture was delivered by Dr. Hayward in the boardroom of the Hahnemann Hospital on Friday last to a full and appreciative audience, in which were several medical men. The doctor mentioned that the most common effect of malaria is fever, which shows itself in either an intermittent, remittent, or continued form; and that the continued form sometimes puts on such a malignant character, especially in Africa, as to get the name of black water fever. Intermittent fever, he said, is easily and quickly cured by quinine, when given in the proper way at the time; but remittent is only occasionally to be cured by quinine; and for black water fever, quinine in full doses is positively a dangerous drug. For black water fever he advocated especially two medicines, viz., phosphorus and crotalus (rattlesnake venom), maintaining that black water fever produces disintegration and destruction of the red corpuscles of the blood, very similar to those of phosphorus and snake venoms, and that therefore these medicines are very homœopathic, and consequently very curative of black water fever.

The third lecture of this course was delivered by Dr. Mahony in the boardroom of the Hahnemann Hospital. The doctor explained that for medicines to be really curative of malarial diseases, as of any other, they must be capable of producing in persons in ordinary health conditions and symptoms similar to those present in the patient at the time, and that the more close the resemblance the more rapid and perfect will be the cure. In the discussion that followed it was well brought out that, as malarial diseases depend upon the presence of parasites in the blood, a medicine to be curative must be able to so alter the blood that the parasites cannot live in it, just as vaccine matter does with reference to small pox and antitoxin serum with reference to diphtheria. And that the medicine most effective in the general run of malarial cases is quinine, though it is not effective in all cases, and cannot be borne by some patients. In these cases some other similarly-acting medicines must be employed, such as salicine, cedron, arsenic, &c.

FOURTH LECTURE.

The fourth lecture of this course was delivered on Monday, by Dr. Hayward, in the boardroom of the Hahnemann Hospital. It embraced the diagnosis, management, and medicinal treatment of the following diseases:—Yellow fever, plague, cholera, dengue, tropical typhoid fever, and typhomalarial fever. For the treatment of yellow fever and plague, which, he said, are very similar diseases, Dr. Hayward maintained there are several very effective medicines, the principal ones being phosphorus, crotalus (rattlesnake venom), and arsenic. He asserted that the mean mortality in yellow fever under ordinary treatment was 27·7 per cent., but under homœopathic treatment it was only 7 per cent.—7 instead of 27! And he asserted, further, that these medicines are also prophylactic, and that rattlesnake venom had proved to be very protective against yellow fever in New Orleans and the West Indies. He recommended a dose of phosphorus or crotalus once or twice a day during an epidemic of either disease, or the subcutaneous injection once a day of three drops of a one-to-twenty dilution of crotalus to those necessarily exposed to the infection.

For cholera he reiterated what he said was a well-proved fact, viz., that in every epidemic from 1831 onwards the mortality under homœopathic treatment had been only half what it was under ordinary treatment. The principal medicines, he said, were those originally recommended by Hahnemann, viz., camphor, veratrum, and copper; to these had subsequently been added arsenic and tartar emetic. Dengue, the doctor said, is a highly infectious tropical fever, occurring in epidemics, and spreading rapidly and generally throughout a community, and generally leaving behind it severe rheumatic pains, which last for months. He mentioned several medicines which are eminently curative, and by which rheumatic pains may be relieved and shortened. Typhoid fever, the doctor stated, is much more prevalent and fatal in tropical regions than in temperate climates, so that it is nearly as deadly as cholera. He said that though a germ disease, homœopathic medication can do much both in modifying the course and shortening the duration of typhoid. There are, he said, many medicines which have considerable influence over the fever and over the bowel complication, so that the disease runs a milder course, freer from complications, such as hyperpyrexia, hæmorrhage, and pneumonia, than under ordinary treatment, and he sketched out its ideal treatment. Typho-malarial fevers, he said, is a mixed disease of typhoid and malarial fevers, and arises from the general prevalence in tropical countries of both malaria and drainage filth; and its treatment must be addressed to both these states.

FIFTH LECTURE

The fifth lecture of this course was delivered on Tuesday, by Dr. Hayward, and included the following diseases:—Malarial cachexia, tropical spleen and liver, diseases of the stomach and bowels, tropical diarrhœa, dysentery, and sprue. Malarial cachexia, Dr. Hayward said, is the state of ill-health left after several attacks of malaria, or after long residence in malarial districts, and is a profound anæmia, produced by either destruction of the red corpuscles of the blood by the malarial parasites, or by non-production of red corpuscles in consequence of disease of the two great bloodmaking organs—the spleen and liver. Doubtless it is aggravated by over-dosing with quinine, for quinine over-dosing is very apt to produce not only disease of the liver and spleen, but also severe anæmia, even in persons in ordinary health. It occurs in both acute and chronic form, of which he gave examples. He mentioned several medicines for its cure—if purely malarial, quinine; if not malarial, sulphur, arsenic, natrum muriaticum, phosphorus, and iron. Tropical spleen—ague cake—the doctor maintained, is also one of the results of frequent and prolonged malarial attacks, and doubtless quinine over-dosing aggravates it and makes it more intractable. He named several medicines for its cure, especially ceanothus, iodine, natrum muriaticum, and sulphur. Tropical liver, he said, results partly from Europeans in the tropics adhering to European diet, with flesh meat and alcohol; partly from malarial parasites, and partly from quinine over-dosing; and he said there are several medicines of great efficacy in its treatment, especially bryonia, mercury, and nux vomica, when from errors in diet; cinchona, arsenic and sulphur, when malarial; and bryonia, iodine, sulphur, and arsenic, when partly from quinine over-dosing. The doctor then reviewed the symptoms, management, and medication of tropical indigestion, biliousness, vomiting, constipation, and diarrhœa, mentioning the several medicines that have been found curative, especially recommending dulcamara, rhus, and bichromate of potash for hill diarrhœa. For dysentery he maintained that corrosive sublimate, in very weak dilution, is the most effective medicine, and will cure the great majority of cases, especially if aided by ipecacuanha or hamamelis if there be much bloodiness in the evacuations. In chronic intractable cases he would examine the blood, and if malarial parasites were present he would interpose a few doses of quinine. Sprue, the lecturer maintained, very closely resembles aggravated or chronic hill diarrhœa; and though generally considered incurable by medicine, he said there are several medicines very likely to cure it, especially bichromate of potash and arsenic; indeed, sprue so closely resembles chronic arsenical poisoning that he was sure intelligent and persevering use of very weak dilution of arsenic would cure most cases.

Sixth Lecture.

The concluding lecture of this course was delivered on Wednesday, by Dr. Hayward, in the Hahnemann Hospital. The lecturer dwelt on the diagnosis, management, and medicinal treatment, of the following diseases, viz., bronchitis, pneumonia, and pleurisy as complications or sequelæ of tropical diseases; beri-deri, epidemic dropsy, negro sleeping sickness, sunstroke, and prickly heat. Bronchitis, the lecturer said, may be rapidly checked by the exhibition of aconite and bryonia at first, followed by phosphorus and ipecacuanha. Pneumonia, he said, is equally rapidly and surely cured by phosphorus and bryonia, notwithstanding that some physicians think it a germ disease. Pleurisy, too, is both rapidly and surely curable with aconite and bryonia. The initial shivering in all these diseases is greatly controlled and shortened by a few doses of camphor. Beri-beri, he said, is a very complex and interesting tropical disease resulting from a poison distilled by a germ in the soil of a place; and man living on the soil is poisoned by the exhalations—poisoned, not infected. It very closely resembles poisoning by alcohol, which also is a poison distilled by a germ—the yeast germ. Beri-beri is not infectious, but the average mortality is about thirty per cent. of those attacked. Several medicines, he said, produce symptoms very similar to those of beri-beri, and are, therefore, eminently curative; among them are gelsemium, lathyrus, phosphorus, and secale; and inasmuch as it so closely resembles alcoholic poisoning, he recommended small doses of weak alcohol as likely to be very curative, providing bad alcoholic drinks had not helped to cause it. Epidemic dropsy, he said, very closely resembles beri-beri. It, however, is infectious, with a mortality sometimes as high as forty per cent. Its symptoms so closely resemble those of slow arsenical poisoning as to show that arsenic is so eminently curative that in all probability arsenic will cure all uncomplicated cases. Sleeping sickness is another disease that very closely resembles beri-beri, and it is so generally fatal that on its appearance as an epidemic the natives sometimes abandon their village. In this disease the patient gradually becomes so sleepy as to fall asleep whilst eating, with the food in his mouth, and he slowly sleeps himself to death, generally within four years. Under ordinary treatment it is admitted to be almost always fatal. There are, however, several medicines that, when used homœopathically, are very likely to be curative—such as opium, hyosciamus, conium, cannabis, bisulphide of carbon, phosphorus, and sulphur. From sunstroke, if not immediately fatal, recovery may be greatly helped by the administration of camphor, aconite, belladonna, glonoine, followed by ignatia and sulphur, according to the state of the patient. Prickly heat may be very much controlled by the internal administration of apis, primula obconica, arnica, and sulphur, and externally dusting the skin with flowers or milk of sulphur, calamine, or magnesia.

PLAGUE IN CALCUTTA.

By Dr. Hem Chandra Ray Chaudhuri, L.M.S.

(Continued from p. 364 *of last number).*

Spread of the Disease.

In April 1898 there were 37 cases, 7 in Ward x, 15 in Ward xiii, 7 in Ward viii, 4 in Ward vii, 1 in Ward iv, 1 in Ward i, besides the 2 cases reported by Dr. Dyson. These 2 cases were in 11 Kenderdine's Lane, Ward x. Of the 15 cases in Ward xiii, 2 were in 10 Korabordar's Lane, and 2 in 13 Market Street. Of the 7 cases in Ward x, 5 cases were in Kapalitola Lane, from the 16th April to the 24th April. 3 cases in Market Street occurred on the 24th; 3 cases in Jaunbazar Street on the 27th and 30th. Of the 37 cases, 3 were discharged cured from hospital and 31 were fatal, and the result of 3 remained unknown. The two cases in Kapalitola Lane, were in the same house and occurred on the 17th. The 2 cases in 11 Kenderdine's Lane were Eurasian females, the one was seized soon after the other. These cases were the first among the Eurasians.

The case in 134 Jaunbazar Street, which was taken to the hospital on the 27th, was from the same source as the one which was removed, on the 24th, from 5 Municipal Office Street.

At 96 Phear's Lane, two Eurasian females got the disease on the same day, and died on the 27th.

In May, 33 cases were reported, 8 in Ward x, 6 in Ward xiii, 7 in Ward viii, 4 in Ward xii, 3 in Ward vii, 2 in Ward xix, 1 in Ward xv, 1 in xvi and 1 in xxiii. 2 cases from 6 Bowbazar Street were removed to hospital on the 23rd, one of which died on the same date and the other on the 25th. Both of them were Eurasian females who had come from Karachi 5 months before. 19 Waterloo Street was evacuated on account of two cases occurring in it. The case in 43 Kapalitola Lane of a Eurasian female, ended fatally on the 26th; patient was the sister of one of the females who came from Karachi. From 62 Bowbazar Street a Eurasian male of the name of Cross was removed to the Maniktola Hospital on the 30th, he was discharged cured on the 10th July. Of the same family, 5 suspected cases were removed to the same Hospital. They were not found to develop plague and were discharged on the 10th July.

Of the 33 cases in May, 17 were Hindus, 8 Mahomedans, 7 Eurasians, and 1 Buddhist. 5 cases were discharged from hospitals, 1 unascertained and the rest proved fatal. 28 were males and 5 females. Comparing with April the Wards xii, xx, xv, xvi, xxiii were newly attacked in May. But no case happened in Wards iv and i.

In June, the number of attacks increased to 77, 9 in Ward x, 9 in Ward xiii, 26 in Ward viii, 4 in Ward xiv, 5 in Ward vii, 3 in Ward v, 4 in Ward xii, 4 in Ward ix, 6 in Ward vi, 1 in Ward ii, 2 in Ward xx, 2 in Ward xix, 1 in Ward xxiv, 1 in Ward xxv.

At 20 British Indian Street, Ward xii, a European was attacked on the 28th June. He was allowed a home hospital, and recovered.

18 cases were cured or discharged from hospitals, 1 unascertained and the remaining proved fatal. 41 were Hindus, 23 Mahomedans, 7 Eurasians, 1 Native Christian, 1 Buddhist, 4 undetermined. 64 were males, 12 females, 1 not specified.

The newly attacked Wards were xiv, v, ix, vi, ii, xx, xxiv, and xxv. The Wards xv, xvi and xxiii remained free.

The largest number of attacks, no less than 26, was in Ward viii as follows:—4 cases were in and around Tiretta Bazar, 4 in Colootola Street, 2 in Medical College Street, 1 in Mahomed Crescent's Lane near Medical College Street, 1 in Giri Babu's Lane, 1 in Gangadhur Babu's Lane, 1 in Blackburn's Lane, 1 in Phear's Lane, 1 in Madhub Babu's Bazar, 1 in Baman Bagan, 2 in Bowbazar Street, 1 in Soorti Bagan Lane, 1 in Lower Chitpore Road, 1 in Machuabazar Street, 1 in Peary Churn Sircar's Street, 1 in Syed Saley's Lane, 1 in Kasinath Mullick's Lane.

The general distribution of the disease, unattended with large mortality from other causes in any locality, showed the non-epidemic character of the disease, though the cases ended fatally.

In comparison with the other wards, the Colootola section is the most populous, and from its insanitary condition suffers most whenever any epidemic breaks out. In the last cholera epidemic, for instance, Colootola had more cases than other wards.

In July 1898, 44 cases were reported. 8 in Ward viii, 3 in Ward x, 8 in Ward v, 1 in Ward xv, 2 in Ward xix, 3 in Ward ix, 3 Ward in xiv, 5 in Ward vi, 1 in Ward i, 5 in Ward vii, 3 in Ward xii, 1 in Ward xx, and 1 in Ward xiii.

The wards xv, xix, i and xii were again included in the attack. The exempted wards were ii, xxix, and xxv. Among the 44 cases, 24 were Hindus, 15 Mahomedans, 3 Eurasians, 1 Buddhist, and 1 unascertained. 33 were males and 11 females. 3 cases were in hospitals, and 1 at home. At 16 British Indian Street on the 11th July, Family hospital was allowed at home to a Eurasian female. The other case was that of a Eurasian male, in 29 British Indian Street on the 30th June, who was also allowed to be treated in the family hospital and recovered. It is doubtful if these were genuine cases.

Ward viii headed the list of attacks, but the number decreased in comparison with that of the previous month which had been 26, whereas in July it was only 8.

In Ward v the number increased from 3 to 8. In Ward x, the attacks decreased from 9 to 3. One noticeable feature in July 1898 was the admission of patients in the ward hospitals. On the 1st July a Hindu female, aged 11, of Furreapuker Street, was admitted in the hospital of Ward i. But that happened to be not a case of plague. The same thing was with a Mahomedan male, aged 22, of 5 Colootola Bye-lane, who was admitted on the 6th July in the hospital of ward viii. I saw him at the Mahomedan hospital of the ward.

On the 4th, a Hindu male aged 35, was admitted in the hospital of Colootola ward. He was discharged cured on the 9th July. His name was Boondela Shah, Hindu, aged 50. He was forcibly and violently removed from 149 Harrison Road to the Plague Ward Hospital in Eden Hospital Street on the 3rd July 1898. He was suffering at the time from chronic swelling of the right femoral glands with fever, since Tuesday the 28th June 1898, and he had a pimple on the dorsum of the right foot, which had ulcerated owing to wearing of tight shoe. This was enough to cause him to be dragged to a plague hospital. His case was certainly not a case of plague.

On the 12th July a Hindu, of 69-5 Cross Street, Ward vii, Barabazar, was admitted in the ward hospital. He died on the 14th.

On the 13th from 11 Puggayaputty road, Ward vii, a Hindu was removed to the Ward hospital. He also succumbed to the disease.

On the 17th, from 100 H, Jaunbazr Street, a Bengali was admitted in the Ward hospital in 1 Doctor's Lane. He died on the same day.

Of 44 cases, 4 were discharged from the hospital or recovered.

In August 28 cases were reported. 7 cases in Ward viii, 5 in Ward vii, 5 in Ward v, 5 in Ward xiii, 2 in Ward i, 1 in Ward x, 1 in Ward xi, 1 in Ward ix, and one came from Manicktola on the other side of the canal, that is out of town. In comparison with the last month, the Wards xv, xix, xiv, xii, and xx were free. Ward xi was newly seized.

On the 11th August 4 cases at 5 Municipal Office Street were reported. They were removed to the ward hospital at 109 Jaunbazar Street on the same date. None of them recovered.

The Municipal Office Street cases produced a great sensation at that time. The simultaneous attack of 4 persons, 3 males and one female, in one house created a panic. Some were under the impression they were cases of poisoning. But the facts elicited by the District Medical Officer in charge of the 3rd Division, proved that they were cases of plague.

On the 21st August, from 11 Burtola Street, a Hindu was removed to the caste hospital at 12 Banstola Lane. He died on the same day.

On the 29th, a Hindu was admitted in the hospital of Ward i at 100 Shambazar Street as a suspected case. This case recovered.

In September, there were 11 cases, 6 in Ward v, 2 in Ward iv, 1 in Ward viii, 1 in Ward i and 1 in Ward vii. 9 were Hindus and 2 Mahomedans. 10 males and 1 female.

In Ward v, from Cotton Street and its vicinity 6 cases were reported. Of these 3 cases were admitted in the Ward hospitals. Two in 153 Harrison Road and one in 48 Rutton Sircar's Garden Street. All cases proved fatal.

In comparison with the last month, Ward iv was a fresh inclusion. The Wards ix, x, xi, and xiii were excluded.

During October, November, and December 1898, 11 cases were reported. 4 in Ward v, 3 in Ward vi, 3 in Ward vii, 1 in Ward ix. They were all Hindus and every one of them was of the male sex.

One case of ward v was admitted in the Family Hospital, 1 in the Mayo Hospital and the rest in the Medical College Hospital. All these cases proved fatal.

The year 1899 began with increase of plague in Ward v. In Jan. 1899, it was five in Ward v, 1 in Ward viii and xiv, altogether 7 cases. 6 were Hindus and 1 Mahomedan. All were males. Of these 7 cases, one in Ward v, was segregated at home. The Ward hospital did not admit any case. Excepting one, 6 cases proved fatal.

A sensation was created in the European quarter of the town on account of death in 6 Harrington Street, on the 18th Jan., of Liloo Goala who was attacked with the disease at 49 Banstola Street in Ward v.

It is noticeable how plague cases were removed from one locality to another. 3 cases were thus removed. The attacks on Marwaries and men of the N. W. P. (Khottas) began to increase.

In February, suspected cases were for the first time specified in the returns. They were 16. The real cases reported were 35; 11 in Ward v or Jorabagan which, as in the last month, headed the list, 8 in Ward vi, 4 in Ward ii, 4 in Ward vii, 2 in Ward xxv. Wards i, iii, iv, ix, xiv, xxii, and xxv had one case each. The Wards iii, iv, vi, ix, xxii, and xxv were fresh inclusions in comparison to the last month. It is curious that ward viii had no case.

Of these 33 were Hindus, 1 Mahomedan and 1 of unascertained religion. 23 were males and 12 females.

Ward v Jorabagan is continuation of Barabazar. In many respects it is the worst of the two and can be compared with Mandvi of Bombay. All of the cases, except one, were among Marwaries and Khottas.

In 27 cases the disease proved fatal and in 8 the result was not mentioned.

From 35 in February, the cases at once jumped to 521 in

March. This surely is a sudden and unusual increase. 50 cases were in Ward i, 41 in Ward ii, 42 in Ward iii, 23 in Ward iv, 104 in Ward v, 91 in Ward vi, 26 in Ward vii, 13 in Ward viii, 26 in Ward ix, 7 in Ward x, 12 in Ward xi, 4 in Ward xii, 9 in Ward xiii, 8 in Ward xiv, 8 in Ward xv, 4 in Ward xvi, 3 in Ward xix, 2 in Ward xx, 1 in Ward xxi, 31 in Ward xxii, 1 in Ward xxiv, and 14 in Ward xxv. Nine remained unknown as to their address. Of the 521 cases, 472 were Hindus, 37 Mahomedans, 7 Eurasians, 1 European, 2 Budhists and 2 native christians. 361 were males and 160 females. Only 23 were cured, the result of one remained unknown and the rest proved fatal. Besides 521 real cases, 301 suspected cases were reported. The unaffected Wards were xvii, xviii, and xxii.

The largest number of cases were in Ward v, Jorabagan. So this ward, as in the two previous months, headed the list again. In Jan. the number was 10, in Feb. 11, and in March 105, almost 10 times as much. In this ward the disease was as usual mostly confined among Khottas and Marwaries.

The two deaths in Ward xi on the 11th and 12th do not belong to that ward. The one mentioned in Goltalao and the other in 22 Jeliapara Lane were wrongly entered by the Registrar of the Nimtola Burning Ghat. The first case, that of Arjun, in 30 Nebutola Lane, was first sent by the Secretary of the Vigilance Committee to the Medical College Hospital on the 12th because he refused to be treated in the ward hospital. Information was subsequently received that another Uriya was attacked in the same hut but that he absconded.

The next case in the same ward happened at the same time, in 32 Nebutola Lane, and he died on the 13th. Nundo Lal Chuckerbutty, of 12 Wooryapara Lane, carried the infection from 2 Panchi Dhobani's Lane in Ward v, where two other deaths had taken place just before his attack. He died on the 15th. Magoony, of 15 Serpentine Lane, who died on the 15th, brought the contagion from outside the ward. Krishna Bhabini Debi, a girl of 12 years who died on the 16th, was suddenly attacked with fever just after a bath in the river Hooghly. Nothing could be known of Bridhi Sing, of 131 Lower Circular Road, whose death occurred on the 17th.

Another death occurred in the hut in 15 Serpentine Lane on the 18th. He came from Kalighat and suddenly died. Bihari Lal Ghose of 84 Wellington Street died on the same day. This was in Bowbazar and was a suspicious case. Patient was a milk seller and no steps were taken by the municipality to examine or destroy the milk or *dahi* in the room in which he lived. Golam Hossain came from Ward v and on the same day that he came, that is on the 20th, he died. Surabala Dasi, of 3 Wooryapara Lane, died on the 22nd. She was suffering from malarious fever for 6 months. Suddenly a pimple appeared on the dorsal aspect of the right foot with great swelling and she died on the third day from hydrophobic symptoms. Bolai died in the Campbell Hospital on the 25th.

A few cases remained unreported. In 19 Huzuree Mal's Lane, three deaths occurred within 3 days. The first was of a girl on the 12th after a week's fever. The father and the brother of the girl died on the 14th from fever of three days duration. I saw the dead body of the last two and was satisfied that they had died of plague.

Taking a review of the year from April 1898 to March 1899 the following numbers have been calculated for each ward :—

Ward	April	May	June	July	Aug.	Sept.	Oct. to Dec.	Jan.	Feb.	March	Year
1	1	0	0	1	2	1	0	0	1	50	— 56
2	0	0	1	0	0	0	0	0	4	41	— 46
3	0	0	0	0	0	0	0	0	1	42	— 43
4	1	0	0	0	0	2	0	0	1	23	— 27
5	0	0	3	8	5	6	4	5	11	104	— 146
6	0	0	6	5	0	0	3	0	8	91	— 123
7	4	3	5	5	5	1	3	0	4	26	— 56
8	7	7	26	8	7	1	0	1	0	13	— 70
9	0	0	4	3	1	0	1	0	1	26	— 36
10	7	8	9	3	1	0	0	0	0	7	— 35
11	0	0	0	0	1	0	0	0	0	12	— 13
12	0	4	4	3	0	0	0	0	0	4	— 15
13	15	6	9	1	5	0	0	0	0	9	— 45
14	0	0	4	3	0	0	0	1	1	8	— 17
15	0	1	0	1	0	0	0	0	0	3	— 5
16	0	1	0	0	0	0	0	0	0	4	— 5
17	0	0	0	0	0	0	0	0	0	0	— 0
18	0	0	0	0	0	0	0	0	0	0	— 0
19	0	2	2	2	0	0	0	0	0	3	— 9

Ward	April	May	June	July	Aug.	Sept.	Oct. to Dec.	Jan.	Feb.	March		Year
20	0	0	2	1	0	0	0	0	0	2	—	5
21	0	0	0	0	0	0	0	0	0	1	—	1
22	0	0	0	0	0	0	0	0	1	31	—	32
23	0	1	0	0	0	0	0	0	0	0	—	1
24	0	0	1	0	0	0	0	0	0	1	—	2
25	0	0	1	0	0	0	0	0	2	14	—	17
unknown	2	0	0	0	1	0	0	0	0	6	—	9
	37	33	77	44	28	11	11	7	35	521		804

The following numbers show the distribution of the disease according to the nationalities or sections of the community, and according to sex :—

Hindus	660
Mahomedans	101
Budhists	5
Christians	3
Eurasians etc.	26
Unknown	9
	804

Males	590
Females	214
	804

COMPARISON WITH BOMBAY.

In Bombay, the largest number of cases was in February, in Calcutta in March. In Bombay the increase was gradual commencing from September and came to a minimum in July. In Calcutta, the attack began in April, when the seizures were few in number, it increased in June, then declined in winter, and increased after it. In Bombay the maximum was in the cold weather, when in Calcutta there was the minimum. In Calcutta the largest increase was in summer.

The Course of the Disease in Calcutta had some similiarity to that in Bombay. It was gradual as to its rise and decline. In Calcutta the importation was manifest from one ward to another as in Bombay. The attacks were never suddenly rapid in any locality. It was a gradual spread. In calcutta the type of the disease was not epidemic but in Bombay it was so. No locality of Calcutta was epidemically affected as in Bombay. In Bombay the infection spread from house to house in a perceptible manner. In Calcutta this was at least not clear in the majority of cases.

Overcrowding does not appear to have been a cause of attack either in Bombay or in Calcutta. The attacks were frequently though not always traceable to the dirty habits of particular castes or sects.

In Calcutta, Jorabagan, Jorasanko, Barabazar and Colootola, the four contiguous and insanitary wards inhabited by Marwaries and Khottas, were mostly affected. In Bombay the Mahim, Siwri and Mahalakshmi quarters showed the largest increase. They are dirty and insanitary fishing villages. How our fishermen escaped, it is a wonder. I was and am always afraid of the outbreak of the disease among fishermen. Like Marwaries and Khottas, their habits are very dirty and unclean. The population of Mahim and Siwri is comparatively small. But not so our Jorabagan and Jorasanko. In Calcutta, Shampooker, Coomartooly and Burtola and Fenwick Bazar were next in number. They all contained low classes of people who live in a filthy state. Fenwick Bazar contains Jaunbazar, an insanitary locality.

In Bombay, the next attacked in point of numbers were Mazagaon, Byculla, Kamathipura, and Mandvi. Mandvi, like our Jorabagan and Barabazar, is notorious for its insantary condition. Mazagaon and Siwri are contiguous and the same insanitary condition due to the habitation of fishermen exists in both these localities.

In the Mahim Ward, the two contiguous quarters Mahim and Worli showed great difference in number. In Calcutta, it was so with the Sookea's Street Ward. Situated between Burtollah and Moochipara, it showed comparative immunity. Wards xvii and xviii had no cases, though in the last there are many bustis, where insanitary condition generally prevails.

EDITOR'S NOTES.

Kernig's Sign in Meningitis.

This subject is dealt with in the editorial article in *La Riforma Medica*, July 28th, 1899. In 1884 Kernig found that in patients suffering from meningitis there was great difficulty in extending the leg when told to get out of bed, the thigh remaining flexed at right angles to the pelvis. This condition according to the author was almost constantly found in affections of the pia mater, and not in healthy subjects or in other diseases, so that it becomes of value in the differential diagnosis. When the patient is lying in bed this flexion completely disappears. Kernig's observations were founded on 15 cases of affection of the pia mater, in 8 of which the diagnosis was confirmed *post mortem.* Firis, of Copenhagen, confirmed the existence of Kernig's sign in 53 out of 60 cases, and other observers have also noticed its presence. No very satisfactory explanation of the sign has been offered.—*Brit. Med. Journ.*, Sept. 16, 1899.

Enlarged Prostate.

Bottini (*Clin. Mod.*, An. v, n. 25) says that enlarged prostate is not so common as is usually taught; a very fair proportion of cases of dysuria in old people are due to simple atony of the detrusor urinæ, and are even associated with atrophied prostate. The symptoms of prostatic disease may be divided into three stages. At the beginning the chief symptom is increased frequency of urination, the total quantity of urine remaining the same. This, in the author's opinion, is a compensatory phenomenon, owing to greater effort on the part of the detrusor. At this stage coitus is apt to be accompanied by an unusual discomfort, and the semen is sometimes streaked with blood. In the next stage a polyuria sets in, and urgent need of micturition. Semen flows rather than is ejaculated out of the meatus in coitus, blood is never seen. Dyspepsia from absorption of retained urine and subicteric changes in the skin are liable to appear. At this stage too, hæmorrhoids may occur. The supposed advantages of drinking large quantities of alkaline or other waters are strongly decried by the author both in the cure of enlarged prostate or of calculus.—*Brit. Med. Journ.*, Sept. 23, 1899.

Tumours of the Corpus Callosum.

Schuffer (*Rivis. Sperim. di Freniatria*, vol. xxviii, f. 2) has collected 25 cases of tumour of the corpus callosum—8 in women and 17 in men. Most of the cases occurred after 40; the mean duration was under one year. Headache failed in 11 cases; vomiting was absent in 15 cases; optic neuritis was observed in 10 cases, absent in 7, not looked for in the others. The mental state was always changed, generally in the direction of weakness of intellect and memory, somnolence, etc. Convulsions occurred in 11 cases; disturbances of sensibility were rare. The mental changes appear to be much more constant in tumours of the corpus callosum than in tumours of other parts of the brain. The fact that some cases of congenital absence of corpus callosum are not mentally deficient is explained by the presence of compensatory commisural fibres. When there are no definite localising symptoms, in the presence of increasing failure of intelligence, one ought to think of tumour of the corpus callosum. The author attempts to draw up some criteria as aids to the diagnosis of the exact site of the tumour in the corpus callosum, whether anterior, median, or posterior.—*Brit. Med. Jonrn.*, Oct. 7, 1899.

Congenital Defect of the Brain.

In the last volume of the *Arbeiten aus dem Institut für Anatomie und Physiologie des Centralnervensystems* of the Vienna University (part vi., 1899), issued under the editorship of Dr. H. Obersteiner, an account is given by Dr. Lappert and Dr. Hirschmann of a very interesting case, medically and legally, of congenital defect of the brain. The child lived 11 days. In the necropsy which was made the following conditions were found. The spinal cord was well formed except that the pyramidal tracts were absent and that some degeneration was found in the fibres of the posterior columns. There was a complete absence of the cerebral hemispheres, basal ganglia, and superior corpora quadrigemina, together with the part of the cerebral peduncles related to these structures. The eyes were developed but the optic nerves were atrophied. Sections of the spinal cord stained with carmine showed that the large anterior cornual cells were normal, a fact which would indicate that cerebral impulses coming down *viâ* the pyramidal tract fibres were not a *sine quâ non* to stimulate development of these cells and that their absence was not sufficient to cause an arrest of development. No sufficient explanation could be given of the presence of degenerated fibres in the posterior columns. The fact is interesting and noteworthy that a child without cerebral hemispheres should have lived to full term and survived for 11 days after birth as in this case.—*Lancet,* Sept. 30, 1899.

Cerebral Abscess following on Orbital Phlegmon.

Szulislawski (*Klin. Monats. J. Augen.*, August, 1899) reports the case of a workman who was struck below the left eye with a shovel. (January 22nd). When examined two days later a contused wound with ragged edges was found in the inner part of the lower lid, and a probe could be passed to a depth of 47 mm. There was abundant purulent discharge, but no bare bone could be felt, nor splinters nor foreign body. Eye prominent and its movements limited, especially up and in; marked conjunctival chemosis; conjunctiva slightly torn, but rest of eye intact; media and fundus normal; vision 6-12, of right 6-6. On irrigating wound fluid escaped by nose. For the next fortnight there was a free purulent discharge. February 9th. A minute piece of bone was removed from the wound, after which suppuration quickly stopped and the wound healed up. February 14th.

Severe headache during the night; temperature raised; aperient ordered. February 15th. Headache less, temperature down. Fundus oculi normal. From now on there was no fever, but patient got very weak, with moderate headache; pulse 70, regular and full. February 17th. Vomited twice. February 21st. Vertigo during last two days. Patient was now removed by his father from the hospital, but died on February 24th. Twelve days later exhumation and inquest. The eye was intact; the bony wall of orbit was intact and covered with normal periosteum. Brain membranes smooth and shining, and showed no trace of inflammation. Pial and iris engorged, but their contents and of the sinus normal. In left frontal lobe an abscess, the size of one's fist, existed, communicating with the lateral ventricle on the one hand, and almost reaching the pial membrane on the other. No other change elsewhere. The author regards it as a case of metastatic abscess following on the orbital trouble.—*Brit. Med. Journ.*, September 30, 1899.

Sudden Recovery in a Long-Standing Case of Melancholia.

Dr. Theodore Diller reported an interesting case at a meeting of the Pittsburg Academy of Medicine held on May 29th, 1899. It was that of a married woman, aged 34 years, who suffered for seven years from melancholia. During the last five years the patient was so listless and apathetic that she had to be dressed and undressed by the nurses who were in attendance upon her, and during all that period she scarcely uttered a single word. On the night of May 16th, 1898, she was undressed and put to bed as usual by her nurse at St. Francis's Hospital. On the next morning when the sister went to get her up to dress her and to place her in the armchair which she had daily occupied for five years the patient was found to be already up and busy making her bed. She greeted the sister cordially and conversed freely with her, telling her that she had got well and would like to go home. From that time to the date of the above communication (May 29th, 1899) she seemed entirely rational. She could speak freely of her recent illness, "gave the names and character of the various physicians who visited her, and related many of the incidents which had occurred during each year of her illness." Dr. Diller observes that no actual dementia could, of course, have existed at all in this case, which is also valuable as illustrating how long melancholia may exist without dementia ensuing, while it also shows the possibility of recovery in such a patient. "A practical lesson which the case emphasises is that a patient with apathetic melancholia although he may not utter a word for years may remember and understand all that is said in his hearing; so that it continually behoves nurses and physicians to be careful as to what that they say in the presence of such a patient."—*Lancet*, October 7, 1899.

Transplantation of Ovaries.

J. F. McCone (*Amer. Journ. Obstet.*, xl, 214, August, 1899) makes a preliminary report of experiments on the transplantation of the ovaries. Thirty animals were employed. The first series demonstrated that pregnancy could occur where there was no contact between the ovaries and the Fallopian tubes; in a rabbit the left ovary was removed, and the right tube was ligated; ten months later a young rabbit was born, and a necropsy of the mother animal showed occlusion of the right tube and patency of the left, with the presence of a large and functionating right ovary. In the second series of experiments it was found that ovaries grafted from one part of an animal (rabbit) to another part of the same animal continue to grow, to functionate, and pregnancy can and does occur. The ovary was either sewed simply to the mesentery or broad ligament (serous surface to serous surface), or a pocket was formed in the peritoneum or broad ligament and the raw surface of the ovary grafted into it. A large white female rabbit was castrated; the ovaries of another rabbit were grafted into it, one on to the broad ligament, the other on to the omentum; four months later the animal gave birth to five well-formed offspring. In the third series the ovaries of a bitch were implanted in a castrated rabbit, and three and a-half months later the animal was killed and examined, when it was found that the uterus and Fallopian tubes were healthy, and that the ovaries had continued to functionate, as was shown by the presence of healthy maturing Graafian follicles. The deposit of abdominal and pelvic fat was not excessive. McCone holds that his experiments show that conservatism of healthy ovarian tissue, even on the opposite side, from a patent tube should be followed out, and that successfully planted ovarian tissue prevents post-castration atrophy of tubes and uterus. "The grafting of animal ovaries may be used in the human species to prevent the atrophy and post-castration nervous symptoms."—*Brit. Med. Journ.*, Sept. 30, 1899.

Suture of the Heart for Penetrating Wounds.

Minni (*Giorn. Internazion. del Scienze Med.*, January 15th, 1899) has found, after a careful study of statistics, that only 19 per cent. of the cases of penetrating wounds of the heart are immediately fatal. Operation in these cases gives the best possible hope of saving life provided no time be lost in undertaking it. He mentions 8 cases treated by suture, and gives the details concerning one of them which occurred in his own practice. In Farina's case the wound, which was situated at the apex of the right ventricle, was 7 mm. (¼ inch) long. It was immediately sutured. The patient died on the sixth day, from pneumonia. In Rehn's case the situation of the wound was similar; it was half an inch long. The operation of suture was performed 24 hours after the infliction of the wound. The pericardium and pleura were drained. The patient recovered. In Cappelen's case the wound was at the apex of the left ventricle, ¾ inch in length. The left coronary artery was wounded. Primary union took place, but the patient died of pericarditis on the second day. In Parozzani's first case the situation and size of the wound was the same as in Cappelen's. After 12 hours the wound was sutured, primary union took place, and the patient recovered. In Parozzani's second case the wound was in the same situation, but only half an inch long. The operation was performed within a few hours. There was primary union, but the patient died of collapse on the second day. In the author's case the wound was 1 inch long, involving the anterior wall of the left ventricle, a little below the transverse sulcus, and a little to the outer side of the longitudinal sulcus. The patient was operated upon almost immediately, but he died before the suture was completed. In Giordano's case the wound involved the edge of the left ventricle, and was three quarters of an inch in length. After two hours had elapsed the heart and pericardium were sutured, and the pleura was drained. Death occurred on the 20th day, from septic pleurisy. In Parlavecchio's case the wound was V-shaped; each arm of the V measured 1¼ inch. The heart was sutured, and complete recovery took place.—*Brit. Med. Journ.*, Sept. 30, 1899.

Crotalus in Bubonic Plague.

The Indians inhabiting the country of the tributaries of the head waters of the Amazon, are subject to a disease, never epidemic but endemic, which resembles in a very marked degree some of the distinctive features of the bubonic plague. There is the same bubonic abscesses, sloughing ulcers, rapid wasting of flesh and speedy failure of the vital forces. The country is covered with dense forests, often impenetrable to the sun, the land low and swampy, and the air full of noxious vapors. The huts are filthy, the food mostly fish, and the habits of life but little above the animal. The disease, of a bubonic nature, but having no name, is often controlled by a scarification on the skin with the fang of the crotalus, through which is introduced into the circulation of the blood a minute portion of the poison. The poison of the crotalus overpowers that which is raging in the blood. Following this injection of a poison the decoction is given of the *cedron*, a nut resembling in its medicinal action *cinchona*, to neutralize the action of any excess of the crotalus and in the destruction of the poison germs of the disease.

The virus of the crotalus and the lachesis have long been used in medicine in suppurative diseases with low vital powers, but it is to be doubted whether in being given by the stomach they fully accomplish the result intended. To produce their full poisonous action they must be introduced directly into the circulation. If taken into the stomach, through the chemical changes produced by the action of the saliva and gastric juices they become inocuous as active poisons, although they undoubtedly produce a certain effect upon the vital forces, indicated by the type of the disease and the condition of the system. The poison should always be introduced in a form more or less attenuated, according to the severity of the disease, not by the stomach, but directly into the circulation, in the same manner in which toxins are given, by the hypodermic syringe.

The characteristic symptoms of the two diseases, both owing their origin in a very great extent to the same causes, filth and an impoverished condition of the blood from unhealthy food and surroundings, might point to the same remedies. It would not be the first time that science has received its most valuable suggestions from the wild men of the forests.—*Medical Times*, Sept., 1899.

Bacteria as Destroyers of Masonry.

Bacteriology has shown how we may count alike upon friends and foes amongst the myriads of bacteria known to us. The friendly species, however, are decidedly in the ascendancy, but comparatively few pathogenic organisms having been isolated and recognised. Recent researches have shown how important is the rôle of the bacterium in many industrial processes especially where the production of articles of food is concerned. Ascertained facts would seem to teach that bacteria after all may serve us as tiny engineers who can perform stupendous work when associated in myriads so long as they are placed under a favourable environment. The disposal of sewage by purely bacterial agencies, which under suitable conditions convert an offensive material into simpler innocuous materials, is perhaps the best case in point. But the disintegrating action of bacteria, though perhaps an indirect one, must, according to recent observations, be reckoned with as a source of mischief. At first sight it would seem hardly possible for bacteria to be concerned in the breaking down of a stone wall, yet such would appear to be the case according to some ingenious observations directed to the nature of the decay of cement. The gradual disintegration of the cement-motar used in water-supply reservoirs is one of the serious troubles met with by water engineers and a trouble which so far they have not been able to avoid with any measure of practical success. Hitherto this action was supposed to be the result of the solvent property of carbonic acid and other mineral substances commonly present in a water-supply. The cement gradually disintegrates and becomes a kind of mud which slowly detaches itself. This strange process is due to the action of none other than that bacterium known as the nitrifying organism. An examination of the mud shows it to be teeming with these organisms. The organism, however, cannot flourish in the absence of nitrifiable pabulum. In its presence, however, nitrous acid is produced which leads most probably to the disintegration of the cement lining of the water reservoir. The nitrifying organism is the one upon which so much depends in the purification of sewage and effete matters. On this account its growth should be encouraged, and, it is curious, therefore, to find that the organism appears as an objectionable factor in the attempt to supply and store an abundance of pure water for drinking purposes.—*Lancet*, Sept. 23, 1899.

Johannes Mueller.

On October 7th a monument to Johannes Müller was unveiled at Coblentz—the place of his birth—with due ceremonial. Rudolf Virchow, the great pupil of the great master, was the principal speaker. He said that the promoters of the movement had found it difficult to choose an appropriate inscription. The simple one chosen by the sculptor: "To the great anatomist and physiologist," would perhaps hardly satisfy all concerned. Strictly speaking, Johannes Müller was a biologist, a naturalist whose aim was the study of life itself in its universality. He was the first to use the microscope in researches on living beings; he was the first to disclose to us the fauna of the seas. His example inspired the deep-sea researches of our own day, of which the German scientific station in Naples formed a centre. "For what purpose," said Professor Virchow, "is all this? What is the sum of all these problems? It is the knowledge of the interdependence of things, and here we come to the difficult that separates, and will long continue to separate, humanity. We old pupils of Johannes Müller think his method pre-eminent. Müller's method was observation; he put things into the right positions for exhibiting their action, and then registered his observations. This is called the objective method. When Müller was a young man the reigning method was the subjective." The subjective natural philosophers endeavoured to find truth by the method of inductive thought. At the time of Müller's youth it was believed that from inanimate nature, from atoms, from matter, or substance, new combinations might form themselves, which finally might lead to the generation of living organic forms, that in short plants and men might be evolved from dust. In modern times this had been named spontaneous generation. Johannes Müller warned against such hypothetic conclusions. He said: "We cannot generate living substance, and as long as we cannot do so; as long as we have no proof, we must put these theories aside; and (said the speaker) that is the standpoint of resignation, of submission, that is the true position for naturalist, such as Müller was." Professor Virchow went on to say that in Coblentz, where the eye fell upon so many monuments of warriors, this was the first public monument erected to a man of pure peace. Johannes Müller was no politician; he shared the position of Goethe as a man of science and of peace. His monument would exercise the greatest influence if it incited youth to emulate Müller's example; it was a testimony of the heights of human knowledge to which simple objective thought could rise. Professor Koester, Rector of Bonn University, speaking as the representative of the Monument Committee, then handed over its charge to the mayor and municipality of Coblentz. Professor Waldeyer, Rector of the Berlin University, made the closing speech as the delegate both of the Berlin University, where Müller's chief teaching years were spent, and of the Prussian Academy of Sciences. In these two institutions, said Waldeyer, Johannes Müller had raised a monument to himself that no time could destroy.—*Brit. Med. Journ.*, Oct. 14, 1899.

Laughter in Disease.

J. M. Raulin (*Thèse de Paris*, 1899, No. 662) has collected a great number of observations on smiling and laughter in various morbid conditions. In paralysis of both facial nerves Duchenne has remarked that the patient seems to "laugh behind a mask." Although the mask remains immobile, a change of colour may accompany the sentiment of joy. In progressive myotrophy of children there may be a peculiar laugh; it may be a kind of "risus sardonicus," produced by the action of the buccinator and risorius muscles without the aid of the other muscles which play a part in the movements of normal laughter. In bulbar paralysis it is exceptional to have the zygomatici majores affected to an appreciable degree. In this affection when the patient begins to laugh he may not be able to stop, the mouth remaining open (like that of an ancient comic mask) perhaps until the patient himself approximates his lips with his fingers. In disseminated sclerosis the laugh may be a spasmodic one, lasting several minutes; Oppenheim has even seen it so prolonged as to cause cyanosis of the face and give rise to a fear of asphyxia. Both laughter and crying in this disease may occur without sufficient reason, but crying less often than laughter. During the laughter Parinaud noticed that the pupils might either remain unaltered, or, on the contrary, become extremely dilated (even in patients with myosis). In icterus gravis, in spite of great prostration, a smile on the patient's face is not rarely observed. The true "sardonic laugh" occurs in tetanus. In mental affections unnatural laughter is often a prominent symptom. The two sides of the face during laughter may have different expressions; and this may be observed in epileptic cases, in senile dementia, and in general paralysis, especially when the dementia is rapid. Fits of spasmodic laughter occur in hemiplegic patients; such a fit is the exaggerated expression of a feeling of gaiety. In pseudo-bulbar paralysis the uncontrollable spasmodic laughter constrasts with the ordinarily immobile visage, and may be very disagreeable to the patient himself. On this account the patient may endeavour to avoid everything which he thinks likely to induce laughter, for such laughter is most exhausting. An illustration given by Raulin shows characteristic spasmodic laughter in a man with double athetosis. Raulin narrates the case of a girl, aged 18, with an hysterical laugh of four months' duration. The laughter commenced after the inhalation of chloroform for some slight operation. Whilst under the influence of the chloroform the patient laughed and talked with the attendants, and on waking up the spirit of gaiety and laughter persisted, just as if it were the result of hypnotic suggestion. The girl was easily cured (as far as the laughter was concerned) by being hypnotised and told to forget her inclination to laugh. Hysterical glossolabial hemispasm can produce a peculiar one-sided grinning expression, similar to that of a grotesque mask in the church of Santa Maria Formosa at Venice. Raulin describes a variety of methods of producing an artificial smiling or laughing by hypnotic suggestion. Some good portraits exhibit well the grotesque expression of laughter which may occur in maniacal cases. Raulin points out that laughter, like yawning, may have a physiological reason. It promotes respiration, etc., and may supervene with a wholesome revulsive action after a state of fear, during which there has been deficient respiratory movement, together with a tendency to vasoconstriction.—*Brit. Med. Journ.*, October 7, 1899.

CLINICAL RECORD.

Indian.

CASES UNDER DR. M. L. SIRCAR.

1. *A Case of Inguinal Hernia.*

Babu N. K., aged about 63 years, is subject to hernial protrusion in the right inguinal region. The protrusion does not advance much beyond Poupart's ligament.

On the 17th August last at about 11 A.M. he had an attack of this kind. The immediate cause appears to have been straining during defæcation. The tumour was hard and very tender to touch. The patient remained quiet in his bed, the bowels moved once or twice; at about 5 P.M. very gentle taxis was applied to reduce the hernia without any success. As there was no urgent symptom he was no further molested; but was ordered to remain quiet in his bed and to apply ice over the tumour. Ice was applied with an ice bag for about an hour but it did no good. The patient remained in this state during the whole night and had very little sleep. On the morning of the 8th I was consulted. I prescribed *Nux vom.* 30. One dose was given at 7 A.M. and another at 11 A.M. In the mean time the patient had one or two stools, and felt easy enough to take a bath and a meal of rice. The hernia went back completely at about 3 P.M., as it used to do before under the same medicine.

2. *A Case of Fits of Convulsions after a Fall,* benefited by Alumina.

January 5, 1899. A child, 4 years old, was brought to my clinique in the morning, with the following history: Had a fall 21 days ago. He fell flat on his back. As he fell, a pile of wood fell on the middle of his body, that is, on his abdomen. The pile was not heavy enough to do any external injury. But the child became unconscious. Half an hour after the fall began to have convulsions which lasted for 6 hours. The intensity of the convulsions would abate by the application of ice to the head. The eyes were up-turned while the convulsions lasted. The child was better and free from convulsions for 15 days. On 16th day, after he had played in the sun for sometime, he began to have a fit of convulsions which lasted 4 hours, and was attended with vomiting, the vomited matters coming out even through the nose. On the following day, the 17th day after the fall, there was another fit of convulsions attended with vomiting. The child was better for 2 days after which he had a fit of convulsions again, but there was no vomiting this time; instead of which there was violent diarrhœaic motion just before this fit, or rather just as the fit commenced. The stools since passed are not diarrhœaic but hard and covered with whitish slime. Since the fall the child has become very timid and fearful. Prescribed *Alumina* 6.

Jan. 10. Child was brought in the morning. He was better, has had no more fit. Repeated the med.

Feb. 2. Report by the father. No more fit, but had fever from the 17th to the 21st January which was cured by *Bell.* 6. There is some timidity still. Gave some unmedicated globules with instructions to bring the child again if necessary. The child was well for two mouths, and a relapse took place after some irregularity. His father having fallen ill at this time he was not brought to me, but was placed under a kaviraj.

Remarks.

ALUMINA was selected in this case for the mental symptom (timidity) and for the convulsions, and it certainly did good, keeping the patient free from convulsions for two months, and which in all probability would not have returned had it not been for some "irregularity," of which the nature I could not ascertain. I have not yet yet met with a case of convulsions, in our literature, in which ALUMINA had been used.

Foreign.

A CASE OF NARCOLEPSY.

By John McGee MacCormac, M.D. Durh.,
Honorary Physician to the Victoria Hospital for Diseases of the Nervous System, Belfast.

As classical cases of narcolepsy are rare I think the following one is of interest, more especially since a definite "exciting cause" seems to have existed.

The patient was a woman, aged 27 years, who came to the Victoria Hospital for Diseases of the Nervous System, Belfast, on June 1st, 1898, when the following history was obtained. Her parents and brothers and sisters were all healthy. She was weaver by occupation and lived in the country until 11 years ago and enjoyed good health up to about four years ago when she had 10 teeth extracted at one sitting and without an anæsthetic. Immediately after this operation she commenced to feel unusually sleepy in the evenings and soon afterwards she began to sleep at her work, the sleep generally lasting from three to 10 minutes at a time and sometimes longer unless awakened. This sleep would overcome her under the most varied circumstances and she found herself quite unable to prevent it. Between the attacks of sleep, which came on without warning, she felt quite clear, but complained of being more easily tired than was natural. For some months after the extraction of the teeth she suffered from lightness in the head with peculiar sensations passing over it from front to back, but these symptoms afterwards entirely disappeared. On examination of the patient all the organs of the body were apparently healthy. She seemed to be mentally and physically lethargic and walked slowly and with a slight stoop. She had a heavy and rather sad expression and her features were somewhat puffy. She slept from seven to eight hours each night.

The following notes were afterwards taken. In March, 1899, it was recorded that the patient had steadily improved, especially during the last six months, the sleeping attacks having decreased from about 12 or more a day to one, and sometimes there was perfect freedom from them for one, two, or even three days. She looked brighter and her expression was more natural. In May the entry was to the effect that the patient had not attended the hospital for some weeks and that the sleeping attacks had again become much more frequent. Since the date of the last notes she had lost her father and had had other worries. In June it was found that she was once more much improved. The medicines which seemed to act best were phosphate of iron, sulphate of quinine, tincture of nux vomica, and nitro-glycerine. Galvanism was applied three or four times a week, a current of one milliampère being allowed to flow through the head from before backwards for three minutes at a time. Nutritious and easily digestible diet was ordered, with moderate exercise and as much fresh air as possible.

I think that the above case is a typical one of narcolepsy as evidenced by the persistent tendency to fall asleep 12 or 14 times daily, by the ease with which the patient was awakened, and by the complete consciousness during the intervals. No symptoms pointing to hysteria or epilepsy were present and the attacks of sleep resembled in all respects "natural sleep," the face remaining unaltered in colour, the sleep lasting for several minutes and often longer, and the patient being quite easily awakened into complete consciousness.—*Lancet*, August 26, 1899.

A CASE OF PERIOSTITIS OF THE BIG TOE

Cured by *Silecea* 3x.

By Dr. Goullon.

Even if it were only a matter of the big toe, it would be a matter of regret to be deprived of it without a good and sufficient reason. It is a matter of deep regret that so many men are still ignorant of the use of our homœopathic remedies, and that to thousands of physicians Homœopathy is a *terra incognita*, while owing to the technical progress of surgery with respect to the indications for performing operations a certain levity could enter, and, indeed, has entered. And still the very case we are about to relate shows how defective and insufficient these operations frequently are; while if the right internal remedies were known and applied everything might proceed much more simply and comfortably and in agreement with the best interests of the patient.

These reflections naturally rose to my mind when Mr. K. came to my office on the 27th of February to show me his leg perfectly restored. The case may be dated back to the year 1891. It had commenced with a corn on the plantar surface of the big toe. Gradually ulcerations and holes had appeared, attended with dreadful pains and a considerable swelling. Finally, in September, '1895, the patient had gone to L., where on examination the diagnose of *inflammation of the periosteum* was established and an operation, apparently thorough, was performed, in which some splinters of bones were removed. The cicatrice, which still remains, shows to what extent the knife performed its duty. Nevertheless, the result was by no means a radical one. On the 7th of July last the patient came to my office, because, as he said, I had cured another patient in his town of a pertinacious case of herpes on the lower part of the face. The chief opening on his toe was about the size of a dime, and the secretion of matter was continuous. Even before this the patient could pass with a probe through various fistulous channels, as he had seen them do when he was being operated on in L. They had requested him to present himself there every three weeks. A plaster with *Salicylic acid* had violently increased his pains, although *Salicylic acid* is a remedy of no light value in the usual corns. (The following prescription is quite popular for this purpose: *Acid Salicyl.*, 2.5, *Collod.*, 20.0, to be externally applied mornings and evenings for 14 days). But frequently remedies applied erroneously, with ever so good intentions, instead of allaying only increase the pains. This applies especially to external applications in chronic ulcers of the legs, in which the sensitiveness and irritability are frequently enormously increased (in so-called erethic ulcers). In such cases *Hamamelis* ointment of the usual strength cannot be borne, while what is called *Ulnu's Cooling Ointment* has proved itself very efficient in my practice. This consists of equal parts (āā 10.0) of *Oil of Almonds* and *Rose Water*, with equal parts (āā 1.0) of *Cera alba* and *Cetaceum*. But this only in passing.

It was interesting to see how this patient under continual homœopathic treatment, though as a farmer he could not give himself any rest, nevertheless arrived at such satisfactory results. If the patient had not told me, my exact examination would not have disclosed the fact, that now and then a little humor is still being secreted. There is not, however, any swelling or pain, and he has a perfect use of his foot. An abnormally thick layer of horny skin serves to protect that affected toe.

The satisfaction of the patient is the greater as he had been requested to again appear in L., this time with the assured promise that the toe would have to be amputated. But even then he could not have been guaranteed a radical cure. On the contrary, I know of a case quite analogous, in which, in spite of the amputation of the toe—also owing to inflammation of the periosteum—and though the operation was performed by one of the most skillful surgeons, there was a fatal issue; for the vigorous young man died in consequence of the operation, or at least in spite of it.

Now I come to the gist of the matter. What preserved the toe and perhaps the life of this patient? Even the same remedy which has performed this same service in dozens of other cases, which has performed wonders in cases of panaritium of high grade, *i. e.*, in affections of the periosteum or the loss of a phalanx, and made a seemingly unavoidable amputation unnecessary, namely, *Silicea*. And to tell the truth, the best progress was made not through the use of the twelve potency, which was first prescribed, but on the use, once a day, of the third decimal trituration of *Silicea,* thus a small triumph for Makrodosism.

An allopath would probably say: Small dose or large dose, *Silicea* as an indifferent substance can help neither in small nor in large doses. "Yes, if we knew no better," we have to exclaim, as we look back on the clinical experience of several decennia. But our intolerant opponents who have no longing for Hahnemann's therapy never get to see or to know of this experience. They would rather steer clear of Hahnemann, and forgetting that their real duty in the interests of their patients is to accept everything good they still cling to their surgical therapy.—*Leipziger Pop. Zetschr. für Hom.* for June in *Homœopathic Recorder*, Sept. 1899.

A CASE OF NEGLECTED PNEUMONIA.

By W. A. Yingling, M. D., Emporia, Kansas.

1899. Mrs. G. F. Æt. 44.

March 24. Has been quite sick for a couple weeks, but thought it was only a bad cold.

Difficult breathing, can scarcely get her breath; breathing very shallow and frequent.

Great desire for, and must have cool, open air, must have doors and windows open to breathe; very much worse and oppressed in a warm or close room.

Very bad cough; she seems full of frothy, ropy mucus in left lung; suppresses the cough because the left lung is very painful.

Left lung seems almost useless.

She is very thin, poor, exceedingly weak.

Hard for her to talk at all.

Can not lie on either side, worse left side.

The sleepy, drowsy condition is worse when she is warm and feverish.

Nausea and vomiting during the past few days, now stomach is very weak.

Milk disagrees; she is averse to all food.

Tongue red, dry and cracked; yesterday there was a brown streak down the center.

For some weeks past she has had a very severe morning diarrhœa, coming as soon as she gets up in the morning; rumbling in the bowels; loose, watery stools, very foul odor; stools infrequent during the day. There has been no stool for thirty-six hours.

She is in a very critical condition and needs the most careful prescribing, hence await developments.

S. L.

March 25. 12-30 A. M.

About midnight *great dyspnœa, almost impossible to breathe at all;* must have all the windows and doors open, and be fanned all the time.

Suppresses her cough from weakness, has not stength to cough.

Very weak, sinking away rapidly; seems as though her end is near.

Lies very quiet.

Great alarm in the countenance.

Dark yellow skin.

Mouth wide open.

Skin of the face drawn taut, especially about prominence of eyes, mouth and nose.

Stomach sensitive to food; vomits food an hour or so after eating (?)

Sulph. mm. (T.), one dose.

P. M. Has rested quite well during the day.

Feels better, she says, during the afternoon and is able to speak a few words.

Very low and must have fresh air all the time, with doors and windows open.

Toward evening not so well as during the afternoon.

Sulph. 9m. (F.), one dose.

March 26. Slept quite a good deal during the night.

Cough beginning to loosen, and she expectorates some yellow, thick, tough matter.

Feels very weak; more conscious of her weakness.

Fever more marked.

S. L.

P. M. A sinking spell at 3 P. M.; unable to breathe and must have fresh air and be fanned.

Coughing; loose cough, seems like a great quantity ready to come up, but she does not expectorate a great deal.

Sulph. mm. (T.), one dose.

March 27. Passed a good night, and rested real well for one in her severe condition.

Feels much better this morning.

Less fever.

Cough less difficult, and is looser.

Must have all the doors and windows open, though it is quite cold, a glass of water freezing solid during the night in the room, and the nurses must be wrapped up as when out of doors, yet she does not suffer from the cold.

S. L.

P. M. Has been able to close the door and have room warm part of the day only.

More expectoration, which is whitish, with some yellow pieces, very sticky.

Skin very yellow, dark.

Apparently less fever.

Soreness of muscles over body, limbs and back.

S. L.
March 28. 4 A. M.
She is again very low, great dyspnœa, no cough, excessively weak delirium.
Very sore all over, cannot bear to be touched or moved in the least, very painful, worse least motion.
Black sordes on the teeth.
Mouth and tongue very dry.
Seems to be sinking away without hope of help; the friends have bid her good-bye, and she expects to die, yet is not restless, but expectant.
Baptisia 9*m.* (F.), two doses, half-hour apart.
8 A. M. Much better.
Resting easy.
No soreness.
Expectoration becoming free.

S. L.
5. P. M. Seems better generally.
Can now lie on her side for a short time, but gets short of breath when lying on the left side.
Can have doors and windows closed most of the time.
No pain.
Not so much cough; expectoration more yellow.
Looks better, and says she *feels* better.

S. L.
March 29. Good night; seems to be improving generally.
Bowels moved to-day, dark and thin.

S. L.
March 30. Good night.
Very slight dyspnœa this morning for a few moments.
No pain. No complaint.

S. L.
March 31. Doing well.
Some more cough and expectoration.
No pain.
Urine thick and milky, but more of it.
Takes more nourishment.

S. L.
April 1. Better. No complaint.
Two thin, *foul* stools.
More expectoration and easier.

S. L.
April 3. Improving.

S. L.
April 5. Convalescent, yet somewhat weak.
Sits up.
Discharged.

Note.—This was a very interesting case, and the most critical, save one, of any case of pneumonia I have seen. On the 28th of march I did not see how she could possibly live, but I was simple enough to tie to the Homœopathy of Hahnemann and depend on the higher potencies to save the woman if there was any chance at all. At our State Society some one said it took *nerve* to wait the action of the remedy, that he must be *doing something*, but this is wrong; it is not nerve, but knowledge, that is required. If we know the action of our remedies we can wait with confidence.

The only possible way to cure such a case is to select the remedy on the symptoms manifest, to prescribe for the patient, and not for the name of the disease. Such critical conditions must be known and carried in the mind; no time is allowed to return to the office in such a crisis as occurred twice during the progress of this case. I thought of *Sulphur* the first time I saw the patient; but the condition was too uncertain, so I waited, with instructions to report promptly any change. That night *Sulphur* was selected at once, and the millionth potency was given because the *promptest action* must be had. The more critical the case, the greater need of speedy action of the remedy, the higher potency should be usually.

At the second crisis *Baptisia* was selected because the patient "looked" Baptisia, the picture I had in mind, the soreness to touch or motion, the dusky yellow skin, the low condition and the *delirium.*

Baptisia is not given in the books as a usual remedy in pneumonia. Raue mentions it as having been given in a case where the patient felt that *the cough was scattered about* and she wanted to get it together, but this condition was not in my patient. I prescribed for, the patient and not for the pneumonia, and the result was the most brilliant; no more medicine was needed and a steady, uninterrupted improvement finally ended the case.

The only nourishment used was Bovinine, which has given excellent result. It was used only as a food.—*Journal of Homœopathics*, October, 1899.

[With all deference to Dr. Yngling we cannot help saying that this case has not been reported as it should have been. Simply to say that it was a most "critical" case is not enough. The daily range of temperature and of the pulse, and the results of auscultation of the lungs, are not given. Merely to note that the left lung was "useless" does not convey an adequate idea of its condition, much less that of the other lung. We could not have known what *Sulphur m m* (T.) means unless the author had said that he selected the millionth potency. But if m m (T.) means the millionth potency, what does 9m (F.) mean? It cannot mean the same potency. If not, why was the potency changed so soon, and why was the former prescribed on the following day again? Is this waiting with "knowledge"? What is S. L? If it is Saccharum Lactis, why not write it down in full? Does the author wish his reader to believe that lower dilutions of Sulphur and Baptisia could not have cured? Had he tried these in similar cases and failed?—Editor, *Cal. J. Med.*]

Gleanings from Contemporary Literature.

AUTO-INTOXICATION A CAUSE OF MENTAL DEPRESSION.

By Willard B. Carpenter, M.A., M.D.,
Columbus, Ohio.

It required more than mere clerical knowledge to declare in a recent address, that "It is not wonderful that we die; it is far more wonderful that we live. The elements are against us from the beginning. The erect position which God gave is against us, and we must pump up the nourishment to the brain against the mighty force of gravity, which constantly fulfils the decree, 'Dust thou art and unto dust shalt thou return.' We engender poisons within ourselves, and no adherence to the rules of hygiene can wholly prevent it. The very thought that aspires so high, the feelings that diffuse themselves so widely that they take in the whole human race, exhaust us, consume us, and so wherever we are, we are journeying by day or night toward our own last resting-place."

This brings to mind the fact that with the very beginning of life starts a contest in cell activity between the powers of life-giving and life-sustaining effort, and those of depression, decay, and death. In a normal, healthy human being all the vital processes tend to maintain intact all their initial integrity, to repair all inroads of attack from without and from within the organism, and thus continue their existence through the millennium. But this vital force depends altogether upon nutrition—the assimilation of nutriment—and right here is the great open door through which from various directions come the attacks that compel the processes of health to become the processes of disease, and the forces that naturally make for health to become their own destroyers. All the later studies into the origin of disease prove conclusively that a man's enemies are frequently of his own physical household; and the late authors unite in giving the following four types of disease-inducing causes: (1) Faulty nutrition; (2) nerve reaction; (3) disturbances antecedent to nutrition, and (4) infection. But to the last only of these several types will we give particular attention now, and that so far as the infection arises from changes and elaborations inside the body and in turn are the effective, provoking cause of melancholia. Man and microbes are no strangers, for from the first day after birth bacteria are found in the various channels of the body, and infectious agents innumerable surround the being every moment and everywhere; but upon the healthy organism they are resolutely inert. These microbes, with the mineral substances introduced with the food constitute the great toxic menace from the outside, and become an effective poison only when associated with deranged physiological processes within. It may seem anomalous to say that a physiological process could become dangerous, but such is the fact—in its excess—in which case are seen alkaloidal ferments similar to those alkaloidal substances due to microbial action. Add to these the alkaloidal poisons due to digestion of foods and the toxins from intestinal putrefaction, and the list is complete of those poisons which man receives or elaborates for his own suicide. And suicide would actually result did not these toxic substances pass out by specially arranged organs and functions; and it is only when these organs and functions are obstructed to some degree that deleterious results follow by absorption of the poisons referred to. The soil becoming bad from faulty nutrition or contact with irritating or decaying substances, furnishes a nidus and tube for the culture of these foreign and autotoxic substances. Autotoxic troubles are polymorphous, and may result from one or more of a large number of factors—*e. g.*, source, dose, track of the poison elements, and the attempts and power of the organism to neutralize or eliminate them. With others, we claim the sources of these toxic materials are four—the tissues, secreting organs, food, putrefactions—each constantly sending its contribution of toxicity to the blood, which in turn depends on the emunctories for relief; failing in which, faulty and toxic itself, the blood carries in its foul current depression, imperfect nutrition, enervation, and forgets its true mission of conservation. The organs charged with preventing or relieving this toxic condition are the intestinal mucosa, the liver, the kidneys, spleen, thyroid body, suprarenal capsules, the sudorific, and some other glands; and the imperfect action or obstruction of any one of them does produce in some degree an auto-intoxication. This through nerve influence that binds the whole mechanism into one organic whole, spreads from neuron to neuron, from periphery to center, till the blighting is felt at the citadel of life. Let this injury be repeated from the same source and from correlated and associated sources, and the *depression* continues till material and at times permanent inroads are left upon the heretofore normal, healthy being.

An unsound, unphysiological body means an unsound mind, which must have gilt-edged, well-tempered instruments for its manifestation. *A depressed body, a depressed mind.*

The arrhythmia of chronic dyspepsia is due to some toxic principle (probably carbonic acid) acting on the medulla. Many such sufferers are depressed in the morning, on awakening, with aching circle around the head, fitful, fretful, uneasy disposition, with insomnia, vertigo, sensibility to cold, and derangement of the special senses. The fermentative products of indigestion are set free in the circulation, deprive the neurons of proper nutrition, associate themselves with the formation of micro-organisms, and are attended by bacterial necrosis until the nervous systems, neurons, and axes, all feel the effect of the virulent toxic agents till what was a half-hour's depression in the morning, easily thrown off, eventuates in a profound depression of spirits, with all its tendencies and perversions known as *melancholia.*

The legacy of many a human being is a neuropathic state showing some stigmata of degeneration—mainly a fragile, unstable nervous constitution: the evidence may be headache or simple nervousness, or only eccentricity. Imagine such a one with these peculiarities, to be effected by the conditions heretofore described, and what more reasonable to expect than that the gloom of melancholy should permanently follow the awful physical depression ? I search the classic articles on this disease or mental condition for causes, and the list is long for effect of worry, work, strain, old age, excesses and excitements of all kinds, but not a hint from any but writers in the last few months about the effect of self-engendered, non-eliminated poisonous matters to tear down both body and mind. It is an axiom that every cause must have its effect, and what more reasonable than that these poisons, alien as they are, should produce the same deteriorating effect that they would in any other place than the human body ? And if the great nerve-center is affected as a part of that body, what is to prevent the mental depression (or exhaustion, which it really is) from appearing and increasing ? This certainly would be the reasonable presumption.

Now, on the other hand, reason from effect to cause. You never find a hypochondriac without defective alimentation and signs of intestinal inactivity—heavily coated tongue, fœtid breath, fitful appetite and longings, constipation, and some urinary irregularities, the sallow, earthy hue of hepatic torpor, and a peculiar odor eliminated by the skin and due to the fatty acids which should have been taken care of by the liver and kidneys. This odor is said to give warning absolutely true, that nutrition is deranged by depressing toxic influences acting through the nervous system. And it is a noteworthy fact that these conditions of faulty elimination and nutrition in the majority of cases exist in some form or other *before* the manifestations of mental depression.

Now, we are face to face with the sluggish action or obstruction of the abdominal organs, what do we find ? Organs retaining what they should have elaborated more perfectly or eliminated from the economy. In the intestines, greatly distended with effete matter, we find the following: mineral substances, chiefly potassa, and the products of disassimilation; products of putrefaction, including ammonia; organic products, including bile—and any or all of these may be reabsorbed by the intestinal mucous membrane. When renal insufficiency abounds we may and usually do find urea, sugar, soda, extractive matters having powerful influence on nerve-centers, bile-coloring matter, heat-reducing poison (not named), cholesterine, but with no excess of phosphorus, and products of intestinal putrefaction. The liver function must be normal or else all elements that should be changed or elaborated therein are turned into the blood-current, to be disposed of elsewhere. Hence, here again the necessity of perfect kidney action, in which case the faulty and diseased products from other organs and tissues are sent from the system in time enough to prevent injury. The other emunctories, the pulmonary and cutaneous, are less important, but proportionately necessary to a healthy, vigorous, non-toxic being. Of all these sources of auto-intoxication the chief doubtless is the intestinal, and this is a matter both of theory and of demonstration. We note again, that the sources of this toxic tendency are foods, bile, putrefaction, and organic waste. Here the potassa is wonderfully and emphatically a depressing poison, with action on nerve-tissue from peripheral ends through spinal cord to cerebrum, and through vasomotor tract to heart and blood-vessels inducing anæmic tissues; then *indol* is the source of the poison indican eliminated by a healthily acting kidney; the bile, whose bilirubin and derivatives carry depression in their wake, presents a compound destructive to healthy function; the fermentative products *sulphuretted hydrogen* and *ammonia* show a readiness to induce copræmic intoxication (unless there be free kidney action), and with this appear the subjective symptoms "depression, mental and bodily, headache, buzzing in ears and deafness, errors of sight, vertigo"—real precursors of dangerous physical and psychical conditions: *acetone, lecithin, muscarin, cholin*, and *alkaloidal products*, which disappear or are inert when the system is protected by liver and kidney barriers. These are the chief conditions and factors obtaining in intestinal torpor, and what can be the reply to the question: "Are constipated people healthy?" How can they be healthy? Your melancholic is always constipated, and his sufferings are chiefly subjective—he experiences "nervous disorders of sensibility, headache, buzzing in ears, and deafness, and psychical troubles." Strangely similar symptoms to those just pointed out as following absorption of self-elaborated poisons.

Are we not authorized by this study to class auto-intoxication as a contributing, if not the primal cause of melancholia? Yea, an absolutely necessary state to all cases of this malady, except those due to traumatism or organic change of structure? Especially in those persons of natural or acquired fragile, vulnerable nervous system, it seems to me both from presumption and demonstration that the poison of intestinal origin can be and must be the actual effective causes of mental exhaustion to the point of melancholia.

We have been long taught that the nerve-tissue depended largely on phosphorus for its effective condition, and that with the normal amount of that element the nerve equilibrium could not be unbalanced. Pathological examinations have been made of the brains of persons affected with melancholia, and the normal amount and even excess of phosphorus found, the explanation of which is that by reason of diminished kidney excretion the phosphorus elements simply accumulated, and were ballast instead of being actively incorporated in the tissues. So function does not depend altogether on anatomical or chemical composition of the organ in question.

Finally, there must be anatomical and functional integrity in all the cells that are engaged in building up and repairing and cleaning the body, in order that self-poisoning may be avoided, and the neurasthenia and anæmia of melancholia give way to a vigorous, robust mentality.—*North American Journal of Homœopathy*, September, 1899.

THE APPLICATION OF THE ROENTGEN RAYS TO MEDICINE AND SURGERY.

An Address Delivered before the Roentgen Society on July 4th, 1899.

By C. MANSELL MOULLIN, M.D. Oxon., F.R.C.S.Eng.,
President of the Roentgen Society; Surgeon and Lecturer on Surgery at the London Hospital.

Ladies and Gentlemen,—Last October, when you did me the honour to elect me President of the Roentgen Society, I was informed by the Council that among the other duties of the office was the delivery of a presidential address. Through their kindness and with your consent I was enabled to postpone this until the end of my year of office and, being human, the responsibility when compared with that of other duties attached to so distinguished a post at that distance of time did not weigh very heavily upon my shoulders. There were other and more pressing needs in connexion with the work of the society; this lay in the distant future, so far off that it did not appear to be a very serious undertaking. But now the future has become the present and the time has come when the various threads must be gathered together and some account be given of the progress which the Roentgen rays have made in the past year and of the vast and ever-increasing importance to which they have attained. In one thing I am bound to confess that I am exceptionally fortunate. So many presidents of other societies are compelled to rack their brains to find something fresh to say—it has all been said so often before and sometimes so much better before. My subject is still in all its freshness and vigour of its youth. It is not in the least hackneyed or worn. The wonder with which it was received at first has not abated in the least. And if I have few examples to guide me I have equally few precedents to hamper me in selecting the line which, with your permission, I should like to follow.

My distinguished predecessor, Professor Sylvanus Thompson, in his inaugural address delivered at the first meeting of our society, drew with a master's hand a picture of the rise and origin of the Roentgen rays and showed what they were, how they were produced, and what relation they bore to the other ether waves. I am not so rash as to court comparison. Fortunately for me our society embraces so many different interests and extends in so many different directions that it is not difficult to find some portion of the subject of its work which has scarcely been touched upon as yet and I am sure you will forgive me for choosing that which appeals to me as a surgeon the most strongly—the practical application of the Roentgen rays to the needs of medicine and surgery and the immense advances which have been made in this direction in the course of the past year.

I feel that it is my duty first of all to clear the Roentgen rays of a stigma which has been thrown upon them and which has in some measure tended to limit their sphere of usefulness. So far as regards the injuries, often of a very serious character, which have followed prolonged exposure to the discharge from a focus tube the events and discussions of the past year go a long way towards proving that the Roentgen rays stand blameless. Whatever the cause the effect is not to be laid to their charge. The ether waves which we recognise as light and heat, are acknowledged by all to have great influence over the changes which take place in living tissues. The ultra violet rays, it is known, are especially potent, and the discharge from a focus tube may be so powerful as to cause the death of the structures which are exposed to it. But not only is there no proof that the ether waves which possess this power are the same as those which can be made visible to us as Roentgen rays, but there is every reason to believe that they are of quite a different order. Screens which cut off one have no influence upon the other and consequences which follow too close exposure may be prevented, or at least very greatly minimised, by the interposition of substances perfectly transparent to the Roentgen rays. These consequences, however, although they may not be due to the action of the Roentgen rays, have an interest peculiarly their own and I cannot help thinking that they have not yet received the attention which they deserve. I cannot help thinking that in a few years' time, or even in a few months—for everything in connexion with our subject advances with startling rapidity—it is quite possible that the existence of the ether waves which produce these results will be regarded as a matter of scarcely less importance than the existence of the Roentgen rays themselves. These waves have scarcely been studied as yet. Their action has been dreaded and avoided rather than courted. Every attempt has been made to eliminate and get rid of them. But of their power to influence the processes of nutrition which take place in the tissues for good or for bad, according to their strength and mode of application, there can be no question, and although in the strict definition of the title of this society they may not come within its scope I cannot help expressing the hope that the society may be made sufficiently comprehensive to embrace them and their action as well as the Roentgen rays themselves. Instances of the injurious power possessed by these ether waves when exposure has been too close or too prolonged will occur to everyone. They are matters of common notoriety. Hairs die and fall out. The cells that line the hair follicles perish, and though as a rule the hair is regenerated after a time the effect upon the surviving cells is shown by the weak and stunted appearance of the new growth and by the fact that it is often white in colour. The epidermis becomes dry and scaly in the same way. The nails are affected, and, briefly, if the exposure is sufficiently close the nutrition of the nearest and most superficial structures is so impaired that they die and are thrown off. In the worst cases the effect extends more deeply still. Not merely the epidermis, but the corium and even the subcutaneous tissues perish, so that when the dead structures do separate at last the destruction may be so great as to necessitate amputation. There is no inflammation at any time. The effect is entirely different from that which is produced by light or heat or by the action of the ultra violet rays. In the majority of instances no change of any kind is perceptible for upwards of three weeks. There is no alteration in the blood-supply or in the innervation of the part, no coldness or loss of sensibility. Doubtless the cells which form the walls of the smaller blood-vessels and the terminals of the nerves are affected like the others, but the death which follows is not due to cessation of the circulation or to defective innervation. Quietly and slowly at the end of about three weeks cell after cell perishes, layer after layer is thrown off, until at last a stratum is reached in which there is still sufficient vitality to enable the tissues, if everything else is favourable, to hold their own and to begin the process of repair. Every case hitherto recorded has been characterised by these peculiar features—features which distinguish these injuries from all others. There is first a long period of quiescence in which no change of any kind is apparent, a period of weeks. Then there is a period of decay and death, extending more or less deeply according to the duration and the closeness of the exposure, entirely uninfluenced by treatment. There is no evidence that anything in the way of active treatment has stayed the process in the least, though it is not improbable that it has sometimes made it worse. And this in its turn is succeeded by a period of repair, as slow and as precarious as it is after an extensive frost-bite, the progress which has taken weeks to make often disappearing again entirely in the course of a few hours. I know of no way in which it is possible to account for such striking peculiarities as these, except in the assumption that the ether waves have profoundly affected the changes which take place in the living substance of the cells themselves.

Such were the results obtained in the earlier cases—results not anticipated and, above all, to be avoided. But because an agent at its first introduction, when its powers are entirely unknown, is found to be of a most destructive character it does not follow that when properly controlled and regulated it may not possess valuable properties of its own. And this appears to be true of these ether waves. Events and discussions of the past year have shown that the power which uncontrolled is able to destroy all that stands in its way may be tempered in such a manner as to prove a valuable source of help. That bacteria living in the tissues can ever be destroyed by its agency, as they can be when growing in artificial cultures conducted under special conditions, is highly improbable. The power of resistances possessed by these minute organisms is as great as, or even greater than, that of the tissues themselves, and anything which tends to lower their vitality would lower the vitality of the tissues to at least an equal degree. All hope, therefore, of destroying such organisms as the tubercle bacillus in the tissues must be laid on one side. But it has been shown that under the influence of these ether waves tissues which have been invaded by certain organisms and which were failing in the struggle may be so strengthened as to be able to cope with their invaders far better than they could before and even in certain instances gain the upper hand without any other assistance. Whether neuralgia and the pain of articular rheumatism and that which is caused by cancerous deposits can be relieved in this way, as has been asserted, I am not in a position to state. It is not unlikely that the benefit which has been experienced in these and perhaps in similar cases has been the product rather of psychical suggestion than of anything else. There is not at present sufficient evidence to say that it was not. But there can be no doubt that cases of lupus and of eczema have been cured by exposure to these waves, not the least successful having been those published in our Archives by Mr. Thurstan Holland, and that not only have they been cured but that the scars left have been of a singularly inconspicuous character, showing that the destruction of the living cells had been reduced to the smallest limit consistent with repair. How far this action is capable of extension it is not possible to say at present. The whole thing is in its infancy. But no one can deny that in these ether waves we possess a power which can quietly and imperceptibly modify the processes which are constantly taking place in living cells in such a way that we can either stimulate them to increased energy or depress their vitality until they quietly and solwly perish. The day may come when the existence of this power may prove of scarcely less importance than the discovery of the Roentgen rays themselves.

The time at my disposal is so short and the field of work so wide that I may not do more than allude to the immense improvements which have been made in the course of the past year in the manufacture of tubes suited to the much more heavy discharges that are being used now and in other technical details. Two especially stand out above the rest as of the highest practical importance in medicine and surgery—namely, the application of stereoscopy by which localisation has been rendered so much more easy and the relative position of deeply buried objects has been made visible ; and, though it is far from probable that we have reached finality in this, the introduction of the Wehnelt break. The time of exposure even for such cases as renal calculi has been shortened from hours to minutes and even fractions of a minute. The risk of causing injury has altogether disappeared. Many operators can point to hundreds of cases which they have taken not one of which has ever suffered the slightest harm. The illumination now is much more brilliant and more steady. Clearness of definition has been increased almost beyond expectation and means have been devised by which photographs can be obtained of many of the soft structures in the body which were previously regarded as too transparent to throw any shadow. It is unhappily still true that a large proportion of the rays is wasted and lost, especially in taking photographs, and that a great deal of the detail is obscured in printing, so that the chief value is in the negative. In other words, we are not yet able to utilise to the full, or even nearly to the full, the light which we can produce. But there can be little doubt that in a short time these difficulties, too, will be overcome and that then the results which we shall obtain will be as superior to our present ones as these are to those of two years ago.

There is no branch of medicine or surgery which does not afford abundant evidence of the improvements which have taken place in the production and utilisation of the Roentgen rays in the course of the past year. The screen has now reached such a degree of perfection that with suitable apparatus the minutest movement of the heart and lungs and the least change in the action of the diaphragm can be watched and studied at leisure in the living subject. Photographs of the most deeply buried bones can now be obtained without difficulty. Measurements of such structures as the pelvis can be taken directly by a simple process of calculation without subjecting the patient to the least inconvenience. And the clinical records of the past year are full of instances showing what has been done and what can be done in medical and surgical practice. I am afraid I should exhaust your patience if I were to attempt to give an account of these cases which would be regarded as in any way adequate by those who have recorded them. But there are some of so striking and definite a character that I may be forgiven for mentioning them. Many disorders which even after the discovery and the first application of the Roentgen rays were regarded as almost impossible of certain demonstration, such as aneurysms of the thoracic aorta, interlobar empyemata, mediastinal abscesses, and patches of central pneumonia, can now be shown upon the screen with the greatest distinctness and localised with absolute accuracy. Photographs can be taken of enlarged mediastinal glands and of other intra-thoracic growths. The illumination now is so steady and uniform that the earliest stages of tuberculous lesions in the lungs can be seen and recognised, partly by the curiously stippled shadows which they cast—partly by the visibly impaired movement which accompanies them—a fact which has not escaped the notice of some of those who are connected with life assurance. Cavities in the lungs, whether containing air or pus, can now be detected at once and the position and depth from the surface can be accurately mapped out, so that the question of the advisability of drainage and operation is once more coming to the front. The presence of adhesions, the alteration in the level of pleural effusions in different positions of the body, the distinction between sub- and supra-diaphragmatic collections, and the existence of cysts or of tumours projecting from the upper surface of the liver and raising the diaphragm can now be shown with the greatest clearness. And the same may be said of the changes in the position of the heart and in the size and shape of its chambers, whether brought about by disease or by strain thrown upon their walls by difficulties in connexion with distant vessels. They can be seen distinctly with the screen and can be watched from day to day, especially easily in those cases in which, owing to the presence of emphysema and the absence of cardiac dulness, the ordinary tests fail to give any information. There is, in short, scarcely any change in connexion with the lungs and the heart and great vessels which cannot now be seen and photographed, scarcely a disease of the chest or of the organs which it contains concerning which the most valuable information cannot be obtained. To such an extent has the fluorescent screen been improved and so easy has investigation with it been made that I am convinced that some day, and probably at no very distant date, the examination of a patient's chest with it will be considered as much a matter of routine and as little to be neglected in all doubtful cases as an examination with the stethoscope is at the present time. Valuable as are the indications given by the ophthalmoscope in obscure diseases of the brain they are not to be compared with those which can be obtained by systematic and skilled use of the fluorescent screen in diseases of the heart and lungs.

The benefit which surgery has derived from the improvements which have been effected in the use of the Roentgen rays during the past year is no less striking. Military surgery will have to be re-written. Thanks to the ease with which suitably planned apparatus can be carried on campaign all the wearisome and intensely painful probings after bullets and foreign bodies to which the wounded look forward with such dread have been swept away. The actual position of the bullet is defined at once, no matter how deeply buried it may be, and if removal is considered advisable it is cut down upon and extracted in accordance with well-defined anatomical principles and the track that it has made is left to heal up of itself. Shot and other substances such as portion of percussion caps have not only been localised in the eye, but their exact shape and size have been ascertained with so high a degree of accuracy that they could be removed by the most direct route through the smallest possible incision. Bullets, the position of which inside the skull could not even be conjectured, have been successfully localised and extracted from the brain. Foreign bodies, such as plates of false teeth which have been swallowed accidentally, or, worse still, have dropped into the air-passages; others, such as Murphy's button, introduced in the course of operation, splinters of bone, pins and needles of various kinds, wire sutures, fragments of glass which have been buried perhaps for years, and numberless other substances have not only been made visible, but have been marked out as accurately as if they had been lying in some perfectly transparent medium, so that they could be excised or not according to the degree of inconvenience which they caused and the relative danger of the operation.

As might be expected the largest proportion and the most striking cases have been furnished by the injuries and diseases of bones and joints. Those only who have experienced the difficulty of determining whether a fracture or a dislocation or both together may not be present in the neighbourhood of such a joint as the elbow when the soft tissues around are so swollen that no bony prominences of any kind can be felt can realise the immense help given by a well-lit fluorescent screen. It is no question now of long exposure or of keeping the patient perhaps a child frightened and suffering pain, quiet for a considerable part of an hour, or even under an anæsthetic. Half a minute is enough. The nature of the injury is apparent at once and, what is even more valuable, it is no less easy to ascertain whether the fracture is properly set or the dislocation completely reduced. If the screen is of service to physicians in the diagnosis of intrathoracic disease, the records of the past year have shown by numberless instances that it is no less valuable to surgeons by enabling them to make sure at a glance that the bones are in their proper relative situation without touching the splints or giving the patient a moment's pain.

Diseases of bones and joints have benefited no less than injuries. Thanks to the improved methods of the past year the hip-joint can now be radiographed with certainty. All the strange appearances which were so misleading and which were due in large measure to the distortion produced upon the photographic plates by faulty position can be eliminated, and the various forms of congenital dislocation can be differentiated from each other and from such complaints as coxa vara which are attended by deformity of a somewhat similar character. The fate which overtakes bony grafts implanted into defects has been watched as plainly as if the grafts were on the surface of a limb instead of deeply buried in its substance. Diseases such as sarcomata, tuberculous deposits, central abscesses, necrosis, and the like, which when they occur in deeply-seated bones are often exceedingly difficult to recognise and distinguish from each other, have been made perfectly plain. Cavities hitherto almost inaccessible without operation such as the frontal and sphenoidal sinuses, have been brought within reach of the probe. Valuable help has been given in the diagnosis of antral and other maxillary tumours and a serious blow has been inflicted upon the reputation of the bone-setter who, now that the position of even the smallest bone can be shown to the patient in a photograph, has been compelled to alter his phraseology if not his practice. So far as surgery is concerned nothing illustrates the immense improvement which has been made in radiography in the course of the past year better than the detection of renal calculi. Until this year the instances in which they had been photographed and verified by operation were few and far between. I do not think that there had been any success at all, except in the case of a few thin and anæmic patients. Now, thanks more particularly to the work of Mr. Mackenzie Davidson in this direction, the detection of renal calculi can be looked forward to with a fair degree of certainty, and, what is even more valuable, as saving patients from unnecessary operation, the evidence can be trusted equally well when it is negative. In all ordinary cases it may be said that if no calculus is seen there is no calculus there to see. Unfortunately biliary calculi elude us still.

Such, ladies and gentlemen, are a few of the practical results of the improvements in radiography in the past year. There may have been no startling discovery—such do not occur every day—but there is no single method or part of the technique in which the advance has not been immense. Important as radiography has become already I believe the position to which it has attained is as nothing compared with that which awaits it. From the number and the scientific standing of those engaged in working at it there can be no doubt, even if fresh discoveries are not made that the results will continue to improve and very likely at an even more rapid rate than they have done already, and that in a little while not only will every institution connected with medicine be equipped with suitable apparatus and, what is still more necessary, with skilled and scientific workers, without whom the best apparatus is perfectly useless, but that all patients, unless their complaint is of the most absolutely simple character, will be examined with the screen or be photographed as a matter of routine. Certainly they will expect to be, for even now, so highly do the general public appreciate the value of the discovery, it is no uncommon thing, and sometimes a rather embarrassing one, for them to come up for consultation armed already with radiograms of the affected part and not unfrequently with the most extraordinary impressions and opinions formed from them. —*Lancet*, August 19, 1899.

Acknowledgments.

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A NEW HOMŒOPATHIC PAMPHLET SERIES FOR THE POPULARIZING OF HOMŒOPATHY.

THE voluntary preservation of knowledge is the great characteristic which distinguishes man from the lower animals. This preservation has become possible chiefly through the agency of speech, by which knowledge is transmitted from one person to another. In the earliest ages of man speech aided by memory was the only means of preserving knowledge. Preservation of knowledge leads to its accumulation and advancement. When speech became transferred from the ear to the eye, became represented by visible symbols, and when these symbols were rendered permanent, then a new agency sprung up for the advancement of knowledge.

It must have been seen from the very beginning that knowledge was power, power for good when properly used, power for evil when abused. And the early possessors of knowledge must have felt the superiority which this power gave them over those of their fellow-creatures who, for whatever reason, had neglected to acquire knowledge, and could not therefore possess the power which it conferred. From very early times, therefore, the tendency to confine knowledge to themselves and to those they could call their own by blood or other relationship, became developed amongst the early possessors of knowledge. But the very fact of knowledge passing from one to many led to its dissemination, though this dissemination was very limited in the early ages.

This unequal dissemination of knowledge among members of a community was one of the reasons, and perhaps the most potent reason, of the division of those members into classes superior and inferior, which soon became differentiated into aristocratic and plebeian, and this differentiation in our country has become hardened and stereotyped into the formation of higher and lower castes, to the great detriment to the progress of humanity. Such a state of things, though still in full force all over the world, cannot last for ever. Knowledge is self-advancing, and its tide irresistible. Amongst the exclusive possessors of knowledge, which, as we have seen, mean the aristocratic or higher castes, rise up individuals who by virtue of their superior knowledge see through the injustice of exclusivism, rebel against it, break down the barriers raised by it, and inaugurate reforms which lead to further advance of knowledge and the general amelioration of mankind. Instances of such reformation marking epochs in the world's history must be familiar to every one.

Civilization, or the progress in evolution of the destiny of man, is the offspring of knowledge, and its development is necessarily bound up with the growth and progress of knowledge. It is the duty of every man, therefore, to assist in the growth and progress of knowledge, especially where the exclusive possession of knowledge has led to the disastrous consequences mentioned above. And the duty becomes imperative where the want of knowledge among particular members of a community who by some chance or other have happened to command power which they do not deserve, and when that power is exercised against literally the vital interests, not of this or that particular class, but of humanity at large.

It is the imperative duty of those who possess knowledge truly and literally life-giving, but against which a dominant majority from purely selfish motives wage a relentless war,—it is their bounden duty to disseminate among the people that knowledge. Not to do so would be a most culpable dereliction of duty.

Strange as it may appear, in no department of knowledge is there so much divergence of opinion as in that which relates to his spiritual welfare, and among none is there so much antagonism as among those who profess to be healers of the soul. The history of the world shows what man has done to man in the name of religion.

Though in medicine there has been much divergence of opinion from very remote times, fortunately till very lately there was not so much antagonism among the members of the medical profession as to lead the followers of one system to mercilessly and unscrupulously persecute those of a different system. Since the discovery of homœopathy and its establishment on lines fundamentally different from those on which the previous systems are built, the spirit of bigotry and persecution, scarcely less violent and unrelenting and unscrupulous than what prevailed and still prevails in the religious world, has entered the medical profession. As usual it is the majority who have taken advantage of their position to persecute the minority.

It is time that such antagonism religious and medical, and the most cruel and inhuman consequences which flow from them, should cease. As ignorance has been the root of the evil, this blessed state of things can only be brought about by dispelling ignorance by the light of knowledge.

We maintain that it is the duty not only of every member of the homœopathic branch of the profession, but of the branch as a whole, to do his and its utmost in placing a knowledge of the fundamental doctrines of homœopathy within the limits of the understanding of every man not in the profession. And we believe that however strange and apparently absurd at the first sight these doctrines may be, it is possible to so present them in the light of modern scientific discoveries and of facts observable by all, as to make them plain and intelligible and worthy of belief.

We, therefore, welcome with pleasure the appearance of a new series of pamphlets issued by one of the Boston medical clubs for the purpose of explaining clearly and in the simplest manner the principles of the new system of medicine. Notwithstanding that a century has passed since its promulgation, the club has truly said that still—"A better understanding of homœopathy is greatly needed, not only that its adherents may be able to give good reasons for 'the faith that is in them', but that their own belief may be strengthened," and moreover that inquirers may have a ready means of obtaining a knowledge of a system which has so fundamentally revolutionized the healing art.

The following general description of the pamphlets, furnished to us by the honorary secretary of the club, will be read with interest.

"In connection with one of the medical clubs of Boston, the work of preparing a series of pamphlets on homœopathy, more especially for the benefit of the laity, has been undertaken and accomplished. The general ignorance which prevails upon the subject is astounding. It is certain that but a small number of our patients have a definite idea of homœopathy and few indeed could defend it against attack from its detractors. In these days of general enlightenment many among the laity are qualified to intelligently investigate this and kindred subjects, if given the proper data. A thorough understanding of homœopathy, its principles and advantages, would strengthen the belief of its followers and prevent some from drifting over to the heresies and fads of the day. Such practical reading matter could also be made the means of making many new converts.

"The treatises on homœopathy intended for lay readers which we have had access to, and we believe we have read most of those that have appeared, are either incomplete or too voluminous. Such treatises should be written in very simple language, the facts presented tersely, and the logic unassailable. The matter of cost must also be considered. Sharp's Tracts are written in a most scholarly way and the style throughout attractive, but they comprise twelve closely written pamphlets, forming a volume of two hundred and thirty pages. The bound set, which was the only one the writer has been able to obtain, costs seventy-five cents. The Homœopathic League of England, has published as many as thirty-five tracts, many of which are ably written, and present strong arguments. The cost in lots is only a little over a cent each, but owing to the large number of them required for each reader, their extensive use becomes expensive. If they had been more condensed and fewer in number, they would have secured more readers. There are many other works on homœopathy, but they offer the same objections as stated.

"There are five pamphlets in all in the series under consideration; each treats of one or more special phases of the subjects, is complete in itself and of convenient size. By the use of headings throughout, details are easily grasped. The entire field has been fully covered. Clearness and brevity have been aimed at in every particular. Gems of thought are quoted from prominent homœopathists, and extracts are given from recognized allopathic authorities, vindicating the principles of homœopathy. The fallacies of old school methods are made strikingly apparent, not by resorting to abuse or ridicule, but by quoting statements made by allopathic authorities against their own system af practice. The evidence in favor of homœopathy here gathered and presented is seemingly overwhelming. It is the most conclusive yet brought together in pamphlet form. Through the kind assistance of two of the members of the committee on statistics of the American Institute of Homœopathy, statistics up to the present time are given, not in the form of tables, but under the heading of each disease, ranging from cholera to measles. Comparative statistics from health reports of nineteen cities appear. In this form the advantages of homœopathic treatment are readily seen. The difference between homœopathy and allopathy of the present day is also made plainly evident. The great changes brought about through the influence of homœopathy abolishing obnoxious and injurious methods of treatment, are made strictly apparent, and it is also shown how much has been accomplished by homœopathy in other directions. The pamphlets have been submitted to the profession and leading editors of our journals, and are generally acknowledged to be the best extant.

"The method of the English Homœopathic League in having pamphlets issued without the author's name, seems to be the correct one. Reading matter of this kind, should not be under the suspicion of advertising the author, and the name of the editor of these pamphlets will not appear.

"Physicians will readily see the advantage of circulating such pamphlets and of keeping them on the reading table in their waiting rooms. If judiciously distributed among patients and sympathisers they cannot fail to advance the cause of homœopathy and promote the interests of its practitioners. Since the average physician would have to give his patients and friends a whole set of pamphlets, the expense must be reasonable. The cost of one hundred of these sets will be but six dollars; twenty-five sets, two dollars; and a single set, twenty-five cents. It will thus be seen that the price of the series when ordered in lots is very low, less than that of any others to be found on sale, in fact it barely covers the actual cost of publication. Pamphlets and information may be obtained from F. M. Adams, Seaverns Ave., Boston, Mass."

To give our readers an idea of the topics treated of in the pamphlets we give the following synopses with brief comments:

No. 1. WHAT IS HOMŒOPATHY?—Medical practice prior to Hahnemann's time. The origin of homœopathy. The principles upon which homœopathy is founded. A few familiar examples of the homœopathic action of drugs. Advantages of homœopathy. Estimate of allopathy by its own leaders. Allopathy and homœopathy contrasted. The scope of homœopathy. Do the so-called "homœopathic specifics," sold at drug stores, represent genuine homœopathy?

In this number the writer rightly justifies the publication of these pamphlets: "Opponents of this system may censure such professional publications for the laity, but *they* never hesitate to disseminate popular reading matter against homœopathy;" and he instances the award of a hundred dollars "for the best essay against the homœopathic theory and practice of medicine," which was extensively circulated amongst professional men of all descriptions and amongst laymen. "It is the opponents of homœopathy who have always opened warfare, and they never hesitate to appeal to the public."

Homœopathy is very properly defined as "a *part* of medical science. It is not medicine, but a great reform in one of its departments. It has no new surgery or midwifery, although it has made great improvements in the medical treatment of surgical and obstetrical cases; and it utilizes the sciences of toxicology, in a manner imposible before the discovery of the law, *Similia similibus curentur*."

While declaring that "homœopathy is applicable to all real diseases," he admits, as did its great Founder, that "many conditions frequently arise, of such a nature that chemical or mechanical measures of treatment are demanded, as, for instance, the emptying of the stomach or bowels of recently taken poison or irritating substances and the administration of antidotes, the evacuation of the impacted contents of the bowels, the suppression of sensibility to pain for surgical purposes or after painful injuries, resuscitation after dangerous hæmorrhages; here the homœopathic law does not apply, because the conditions which demand such treatment are not real diseases."

No. 2. EVIDENCE OF THE TRUTH OF HOMŒOPATHY—The progress of homœopathy. Who are the followers of homœopathy? Is homœopathy applicable in severe diseases? General results from hospital reports. Comparison of mortality in the two schools from health reports of cities. Economy of homœopathy.

Under the above headings the writer gives the most convincing evidence in favor of homœopathy that can be desired. To begin with, evidence is taken from the progress of homœopathy and ought to be convincing. It is, at least, as the writer of the pamphlet truly says, "a strong collateral argument in favor of the truth of its law. Every other system and theory has had its short day and is forgotten. This so-called heresy has survived a century, and instead of dying out, as our allopathic friends would like to believe, it is spreading its roots and branches more and more widely. The number, the skill, and the integrity of the medical witnesses, lay and professional, are ample evidence of the truth of homœopathy."

The most convincing evidence is of course from the success of homœopathy in such formidable diseases, as cholera, yellow fever, diphtheria, scarlet fever, typhoid fever, &c. The economy of homœopathy ought to commend it to governments and states no less than to the people themselves. The writer of the pamphlet has made it "plainly evident that while homœopathy is the best treatment, it is the most economical. By it mortality is lessened, sickness is shortened, convalescence accelerated, and a repetition of attack prevented. Medical attendance is thus shorter, it is more seldom needed, and the cost of medicine is reduced to a minimum. Homœopathy saves life, it saves time, and it saves money." Well has Dr. Sharp said—"It is a boon to mankind from the Giver of all good."

No. 3. THE SMALL DOSE OF HOMŒOPATHY—The necessity of small doses in homœopathy. The actual amount of medicine in the small dose of homœopathy. Misrepresentations of the small dose of homœopathy. The infinitesimal divisibility of matter and its effect on the action of drugs. The action of infinitesimal amounts of substances on the healthy human body. The single remedy of homœopathy. The size of the allopathic dose of to-day and the influence homœopathy has upon it.

The writer, we are glad to see, speaks of the infinitesimal, not of the infinite, divisibility of matter. Theoretically and mathematically matter may be infinitely divisible, but practically and physically it is not. Notable instances of the infinitesimal divisibility of matter are cited from chemistry and the phenomena of sound and light, and striking instances are given of the effects of such divisibility on the action of drugs and of the action of infinitesimal amounts of substances on the healthy human organism, and even on such lowly organisms as plants. We miss here the most remarkable discoveries of Carl von Naegelli on the solubility of the metals hitherto regarded as insoluble.

The writer thus sums up: "If minute quantities of matter can act, and act powerfully, upon the healthy organism, how much more will they be able to act in disease, when the nervous system is in a state of exalted sensibility? A part in health which will bear motion, or pressure, or friction without pain, may have its sensibility so increased by inflammatory action, that the slightest movement, or weight, or rubbing, will produce extreme suffering; so, under disturbances of function, or change of structure, an organ may have its condition so altered and its susceptibility so increased, that a very minute dose of appropriate medicine, such as would make no impression in health, may produce palpable and most beneficial effects when such parts are in a state of diseased action.

"The small dose of homœopathy spares the healthy tissues and functions; there is no upsetting the stomach and appetite of the patient when prescribing for other organs. Any system of therapeutics which disturbs the healthy tissues and functions, is radically bad. That patients are often immediately greatly injured by the large doses of medicine ordinarily given in allopathic practice, and also suffer long from the contamination of their constitutions with such poisonous drugs, is well known."

Another advantage of the small dose noted, is that it "relieves the physician of much anxiety," and Dr. Sharp's saying is quoted, that he had not one-fourth of the apprehension of an unfavorable termination of an acute attack of disease which he had in his former (allopathic) times.

N. 4. HAHNEMANN.—His vast general attainments and his achievements in medicine. He is the initiator of the modern rational treatment of insanity. His discovery of the homœopathic principle. His published works. His denunciation of the drastic measures of the old school. A summing up of his characteristics and achievements. Tributes to Hahnemann by physicians not of his school of practice. Persecution of Hahnemann and his followers. Why homœopathists became and why they remain a separate school of medicine?

In this pamphlet the salient points of the great reformer's life and work are briefly given. He was not only a reformer of the whole science and art of medicine, but before that he had inaugurated the most beneficent reform in the treatment of the insane. He was the first to introduce the non-restraint and mild and humane methods with which Pinel has been credited, "but before Pinel made his first experiment of abolishing the chains and tortures to which the insane were subjected, Hahnemann had taught and practised with success the non-restraint method." When appointed superintendent of the insane asylum at Georgenthal, he never allowed "an insane person to be punished either by blows or by any kind of corporal punishment, because," he believed, "there should be no punishment where there is no responsibility, and because these sufferers deserve only pity and are always rendered worse by such rough treatment and never improved." If Hahnemann had done nothing but this he would have deserved the lasting gratitude of mankind. But this was but the smallest portion of his merit. The discovery of homœopathy has banished for ever all horrors and tortures from medicine and transformed it into a true healing art.

Notwithstanding that Hahnemann was a man of unrivalled erudition, of giant intellect, and the author of numerous and voluminous works, notwithstanding that distinguished men of the opposite school, such as Sir John Forbes and Dr. John Syre Bristowe, have borne testimony to his learning and extraordinary genius, and notwithstanding that such men as the late Archbishop

Whately and Sir William Hamilton had admitted the efficacy of homœopathy and had seen no logical absurdity in the system; the mob of the profession still decry him as a charlatan and a quack, and this cry of slander is still upheld by the leaders of the profession to its everlasting disgrace. "No medical reformer has ever been treated by his colleagues with such persevering and inveterate hostility as was Hahnemann. The number of abusive pamphlets and even large books that were written against him and his system, would make a considerable library. The persecution of the apothecaries was all the more odious, as Hahnemann had done so much to improve their art by his masterly pharmaceutical dictionary. All Hahnemann's services to medicine and pharmacy were forgotten and ignored by his colleagues and by the apothecaries. Both combined to discredit and suppress, if possible, the obnoxious innovation. But Hahnemann was not to be destroyed by persecutions, and he was too great a man to make petulant complaint of what he endured. 'I care nothing,' he says in 1828, 'for the ingratitude and persecution which have pursued me on my wearisome pilgrimage. The great objects I have pursued have prevented my life from being joyless.'"

As regards the reason of our remaining a separate school, the writer aptly quotes the following from a liberal member of the old school: "The fact is, the seemingly sectarian position of our homœopathic colleagues is not one of their own choice, but has been forced upon them by our own bigotry and intolerance; and so long as it exists it will continue to be a standing reproach to our own venerable body." Dr. Helmuth has well asked—"Driven to the wall by relentless persecution, when the earlier homœopathists found all colleges, hospitals, societies, journals, all the avenues of medical knowledge and medical experience save individual reading, cut off to them, what were they to do?"

No. 5. WHAT HOMŒOPATHY HAS ACCOMPLISHED.—Early methods of practice. Methods of practice in vogue when homœopathy came in use. Notables bled to death. The great changes brought about through the influence of homœopathy in abolishing obnoxious and injurious methods of treatment; also how much has been accomplished by homœopathy in other directions. The difference between homœopathy and allopathy of the present day. The physician who practises both ways. Who are the "regulars" and which is the "rational school?"

This pamphlet shows very forcibly and clearly the vast difference between the old and the new schools. To homœopathy is due the abandonment by the former of "the bleedings by leeches, lancets, and cupping, the blisters, the issues, the setons, the cauteries, the drastic purgatives, the mercurial salivation, the diaphoretics, the emetics, which up to a few years ago were universally employed in the treatment of all serious diseases." It is sad to contemplate how, as a consequence of the practice of reckless bleeding, "NOTABLES were slaughtered right and left, besides thousands of common folk. Some of the victims of blood-letting among the great men of history are: Emperor Leopold II. of Austria, and his son Francis I. (the latter in 1835), Goethe, Raphael, Mirabeau, Lord Byron (against his earnest protestations), Count Cavour, the great Italian statesman (as late as 1861), and in America, our greatest man, Washington, 'the father of his country.'" Of the last the writer says—"If Washington had been given a little aconite instead of a lancet, he would probably have been able to die a natural death several years later."

All these murderous weapons of what professes to be the life-giving art have it is true been given up, but "while modern allopathic treatment is a vast improvement over the former practice, yet much remains that is injurious. The powerful hypnotics, antipyretics, stimulants, tonics and purgatives which form so large part of the present allopathic treatment often produce most harmful results." The writer should have added the toxins and the antitoxins which are being injected into the system in the vain hope of prophylactizing against and combating some diseases.

We understand that a sixth pamphlet "has been prepared and will be published if there is sufficient demand for it. It gives endorsement and substantiation of the principles of homœopathy, and treats phases of the subject of special interest from the physician's standpoint." But why wait for the demand? Why not spend a few dollars to anticipate the demand which the supply will to a certainty create?

While we accord unstinted praise to the authors of these pamphlets for the excellence of the reading matter they have produced, we are sorry to be obliged to notice one fault which we look upon as serious, and that is their spelling of homœopathy and its derivatives with the simple e in place of the diphthong œ. This is ignoring its etymological origin, and we cannot see any reason for it unless it be a morbid desire for economy. But such economy is American with a vengeance. We are sorry to see it adopted by a distinguished colleague in England.

THE PURITY OF OUR MEDICINES.

There can be no question whatever that the purity of medicines is absolutely necessary for the due fulfilment of the functions of the physician. Each drug having a specific relation to some disease or diseased condition previously ascertained by actual experiment on the healthy or by experience gained at the bed-side, the application of a drug to that disease or diseased condition can only be correct when that drug is identical in properties with the drug which was actually used in experiment or at the bed-side. To take a simple instance. If opium is the drug which was found by experiment to produce constipation, then if it is required to produce constipation in a diarrhœaic patient after the law of contraries, or if it is used to relieve constipation after the law of similars, we must be satisfied that we have actually opium and not something else, at least, that it is opium and not mixed with something else. In the case of its antipathic use, a slight admixture of something else, unless that something is a virulent poison, may not be attended with undesired consequences, as the dose is generally large, though such admixture however slight is undesirable. In the case of its homœopathic use, however, where the doses are necessarily very small, and sometimes almost infinitestimal, such admixture must be fatal for the purpose for which it is intended.

Thus to take an extreme case, suppose that in a grain of opium there is a hundredth of a grain of catechu, then in the third dilution of such opium there will be in addition the fifth dilution of catechu, and therefore the third dilution of so-called opium will not be a dilution of pure opium, but of opium and of catechu. Even the millionth of a grain of catechu in a grain of opium will vitiate the dilution of the latter, and, indeed, any adulteration, however small the quantity of the adulterating material, will produce the same vitiation.

By strict supervision and due examination both vegetable and animal products may be procured free from foreign admixture. But it is absolutely necessary, in addition, that the species or varieties from which these products are derived, or from which our tinctures or triturations are directly made, should be well ascertained. The pharmacist should use for his preparations only those species or varieties which were actually proved, and on no account allied species or varieties. Thus Bryonia Dioica should never be substituted for Bryonia Alba, Cannabis Sativa and Dhatura Stramonium of Asia for the same of Europe, Aconitum Ferox for Aconitum Napellus, Carbonate of Lime for Calcarea Ostrearum, Liquor Potassæ for the Causticum of Hahnemann, and so on. We should even hesitate to use the Crotalus Adamanteus for the Crotalus Horridus which seems to be the poison which was proved. There seems to be a great obscurity as to what Naja Tripudians is, whether it is the Cobra Keutea or the Cobra Gokhura. It is not exactly known whether the one or the other or both were indifferently used in the provings. The two serpents are varieties of the same species, it is true, but their habits and dispositions are so different, that though their venoms are equally fatal in massive doses, it is doubtful if, in the pathogeneses from smaller doses, there may not be differences marked enough to require their differentiation for therapeutic indications.

But there are other sources of impurity than what we have indicated above, and these are of our own making. They depend upon the very processes by which we prepare our dilutions and triturations. The Pharmacopœia of the American Institute of Homœopathy recently published has touched upon them only incidentally in footnotes, but Dr. Conrad Wesselhœft has drawn attention to them pointedly in his article on the Solubility of Glass in the September number of the *North American Journal of Homœopathy*, which is well worthy of careful perusal by physician and pharmacist. "This is a subject of greater importance," says Dr. Wesselhœft, "than it seems to have been considered; indeed, there is no very strong evidence that it has been taken into consideration in the usual preparation of triturations and dilutions, or potencies as they are called. A somewhat closer acquaintance with the subject reveals the importance attached to it by the chemist."

This closer acquaintance has shown that glass is soluble in water. And Dr. Wesselhœft reminds us that when we deal with glass "we are dealing not only with simple glass of silica and potash or soda, but with a complex combination containing many metals, all of which are recorded as efficient members of the materia medica, and to be found not only among the polychrests, but also among the antipsorics; such as arsenic, iron, lead, magnesium, sodium, etc., etc., of which several and all may be present in the glass vessels used in pharmacy, and all are present in determinable quantities, as we shall see; hence, it will be the duty of pharmacists and of physicians to reckon with these factors in their preparation and administration of potentiated medicines."

The fact of the solubility of glass is not a recent discovery. It dates back, as M. Pelouze has shown, to the days of Scheele and of Lavoisier. Scheele demonstrated it by boiling in a small glass "matrass" and obtaining a white powder which "was nothing but pulverized glass." Lavoisier showed that pulverized glass was soluble also in cold water. Boiling water takes up 10 parts, cold water only 2 to 3 parts to 100 of powdered glass. It is true that in these experiments powdered glass was used, but the inference was legitimate that glass unpowdered may be similarly affected, and this has been found to be the case.

Emmerling found that water boiled in a glass retort from one to thirty hours dissolved from 0·0039 to 0·00643 parts by weight of the retort. He tested also the solubility of porcelain in water, acids and alkalis, and found that water and acid did not affect porcelain at all, the fixed alkalis exerted a considerable effect though less than that exerted on glass. It was found that the effect of boiling solutions was, within certain limits, proportional to the time of boiling, that it was greater with new vessels, diminishing with longer use and rapidly with the temperature of the solution. Alkalis were found to affect glass, even in small quantities. Acids, especially when diluted, had a very weak effect, much less than that of water. Sulphuric acid was an exception, the effect of it was greater than that of water.

According to Dr. C. R. Fresenius porcelain *is* dissolved by water though in a much lesser degree than glass, the former being dissolved to the extent of 0.005 per mille, the latter as much as 0.130. per mille.

Dr. Wesselhœft has found out that glass is affected by alcohol also. "At the outset it seems most probable," says he, "that watered alcohol, at least, must dissolve a certain proportion of glass. As in our pharmacopœia dilute alcohol is mostly used, or where alcohol plus plant-moisture come in contact with glass, it is more than probable that a certain proportion of glass is taken up by the menstruum in making tinctures." This probability was converted into certainty by certain tests which he applied for several months in 1882, the result of which was that alcohol *does* dissolve glass though much less than water.

Dr. Wesselhœft thus relates a simple experiment: "A most significant action was perceived when a drop of simple distilled water was slowly evaporated upon a clean-polished slide, where white concentric rings would appear, consisting of finely accumulated particles, growing less numerous towards the centre of the ring. A significant circumstance is that alcohol evaporated upon glass also produces concentric rings of fine particles. A memorable fact was that these concentric rings seemed permanent and hardly to be removed by much rubbing. The only conclusion to be reached in this instance was that the surface of a finely polished slide is affected both by water and alcohol to a degree visible to the unaided eye, but plainly consisting of concentric rings of fine particles of glass like those of glass-and-water mixture under the microscope."

Alcohol is so greedy of water, it so rapidly absorbs moisture from the atmosphere, that it is difficult, in instituting experiments with alcohol, to be sure that we are dealing with absolute, and not with dilute alcohol. However, it is sufficient for purposes of homœopathic pharmacy to know that even the so-called absolute alcohol is not without effect upon glass, and that even if the higher dilutions are prepared with really absolute alcohol, they must absorb moisture whenever the phials are opened, and thus the alcohol would become diluted, and would in time affect the glass in which the dilutions are kept.

Glass being thus soluble in water, alcohol, acids, and alkalis, the ingredients of which glass is composed must be present in the solutions. Now the bottle-glass, which is the kind of glass used by pharmacists for the preparation and preservation of medicines, contains "besides silica, soda or potash, definable quantities of lime, lead, arsenic, (and saltpeter). These are not all contained in all glasses, but more or less of them enters into the composition of bottle-glass such as we use, and that this is so with regard to lead is easily proved by the behavior of a solution of caustic potash in an ordinary bottle of white glass, where a slimy cloud is formed owing to the action of the potash upon the lead-glass."

Dr. Wesselhoeft gives the following proportions (reduced to our potencies) of glass dissolved in water:

0·0017 grammes of glass per mille = [illegible]
0·0092 „ „ „ = [illegible]
0·0090 „ „ „ = [illegible]
0·0078 „ „ „ = [illegible]
0·0003 „ „ „ = [illegible]
0·0097 „ „ „ = [illegible]
0·00625 „ [illegible] „ = [illegible]

It is not known what the proportions of glass dissolved by dilute and strong alcohol are, but Dr. Wesselhoeft thinks it may be equal to about the tenth decimal and cannot be higher than the twenty-fourth at the most. "Now it must be evident," says he, "that our dilutions must all contain glass in some form and according to its composition also one or more of the other ingredients such as iron, lead, arsenic, lime, etc., all of which are prominent members of our materia medica, as well as silica and potash. It is, of course, impossible at this late date to determine, even approximately, to what extent these constituents of glass have vitiated our provings; but it is, at least, proper and interesting to consider the subject with reference to the making of dilutions and triturations. About all that can be said about it is that up to the fifth or sixth dilution or potency of a medicine, the amount of dissolved glass-materials will be equal in quantity to the amount of drug present. . . . There will then inevitably be present in the 'potency' a very large and always probably *increasing* quantity of glass, with a *constantly diminishing* amount of medicinal matter. This means that by the mode of some medicine being potentized there is always a larger amount of silica and potash predominant, but iron, lead, arsenic, all or one of them, will also be present." Hence he [illegible] "that pharmacists should see to it that the most insoluble kinds of glass, and only such kinds as are free from poisonous metals, are made use of in our pharmacies."

Hahnemann could not have been unacquainted with the researches of Scheele and Lavoisier, and yet we do not find him making anywhere even a suspicion of this possible source of vitiation of the triturations and the dilutions. He even went so far as to declare "that the [illegible] of various medicines in the porcelain triturating bowl seems to impart to them no admixture [illegible] as some anxious persons have vainly feared." He takes care however to qualify the assertion by the word "seems."

EDITOR'S NOTES.

Acoin, a new Local Anæsthetic.

Randolph (*Ophthalmic Record*, August, 1899) has made use of this drug, first described in the *Therapeutische Monatsheft* for January by Trolldenier. He finds that in solutions of 1 in 100 and 1 in 300 it produces satisfactory anæsthesia in an unirritated eye in about the same length of time as cocaine; when there was much congestion it failed. It has a more stinging effect when first instilled than cocaine. It does not damage the corneal epithelium, and has no effect upon accommodation, size of pupil, or tension. It prevents the growth of staphylococcus pyogenes albus. Randolph has removed foreign bodies and a pterygium under its influence, and opened tarsal cysts. Acoin is a white powder, fairly soluble in water; it is derived from guanin, and related to caffein and theobromin.—*Brit. Med. Journ.*, Nov. 4, 1899.

A Consumer of Pins.

Dr. Thomas Annadale reports the case of a twelve-year-old, feeble-minded boy who claimed that he had swallowed a large number of pins. He was, however, not believed, because aside from slight epigastric pain, he neither complained of nor manifested other noteworthy symptoms. Nevertheless, a dose of Castor oil was administered, following which he passed per rectum a quantity of straight and bent pins. Within the next fourteen days the following bodies were discharged *per vias naturales:* Fifty-two pins, one needle, five large nails, with broad heads, three smaller nails, one shirt button, four carpenter's nails, and finally three shoe nails. The case is noteworthy, in that the patient was almost free from symptoms, notwithstanding the large number of foreign bodies he disposed of.—*Dietetic and Hygiene Gazette*, Sept., 1899, in the *Homœopathic Physician*, September, 1899.

Peronin, a New Local Anæsthetic for the Eye.

Quaita (*Settiman Med.*, October 7th, 1899) has tried the effect of 5 per cent. solution of peronin (chlorhydrate of benzolic ether of morphine) as a local anæsthetic in the eyes of thirty healthy adults. At first it causes a pretty severe burning sensation, which, however, soon passes off, and is followed in three or four minutes by well-marked anæsthesia, lasting for nine or ten minutes. Peronin has no action on the diameter or mobility of the pupil, nor on the accommodation visual, acuity, or eye tension. The corneal epithelium was never affected nor infiltrated, as may happen after cocaine. The great disadvantage of peronin as an ophthalmic anæsthetic is that it causes rather intense vascular injection with lachrymatous and serous chemosis. The author suggests that it may be more useful than cocaine in enucleation or evisceration of the globe, as it produces a deeper anæsthesia, and the increased vascularity does not matter in this case.—*Brit. Med. Journ.*, Oct. 28, 1899.

Treatment of Lupus by X Rays.

Thurston Holland (*Archives of the Roentgen Ray*, May, 1899) gives an account of the treatment of 2 cases of tuberculous dramatitis by the *x* rays. The first case of eleven years' standing occurred in a girl. The dorsum of the foot was affected with tuberculous ulceration of the skin, and had resisted treatment by scraping and caustics. The second case was one of lupus of the face and neck of five years' duration in a boy; this had also resisted the normal treatment. During two months 19 exposures were given to the first case, and 17 to the second. The exposures lasted 15 minutes. A Newton's tube was used with a ten-inch coil, and the platinum kept red hot. Both cases quickly improved, and were healed when seen several months afterwards. The photographs taken before and after treatment appear to be conclusive. In each case *x* ray dermatitis occurred causing loss of the nails in the first and circumscribed alopecia in the second case. This, however, was only temporary, both hair and nails soon growing again.—*Brit. Med. Journ.*, Nov. 4, 1899.

Meningeal Affections in Children.

Haushalter reported at the meeting of the Société de Médecine of Nancy (June 1st, 1899) two interesting cases with clinical and *post-mortem* observations. (1) An infant, aged 10 months admitted to hospital for convulsions dating three days previously, died some hours after admission with a rectal temperature of 41·5° C. There were convulsive attacks, and in the intervals between the attacks there were generalised spasmodic symptoms. The necropsy revealed a suppurative condition of the membranes of the left hemisphere of the brain due to pneumococci; the right hemisphere was the seat of a subdural hæmorrhage, part of which was liquid, and consisted of recently effused blood. The absence of a history of recent cranial injury left in doubt the cause of this condition in the right hemisphere. (2) An infant, aged 10 months, attacked apparently with gastro-enteritis, exhibited in addition to the characteristic convulsive crises a respiratory (asphyxial) convulsion, and uttered screams, became cyanosed, and suffered from convulsive movements of the eyeballs. The attacks would last two to three hours, and would recur several times during the day. The intensity of the attacks increased, and after suffering for nearly six months it was admitted to hospital, where it died six hours after admission. The necropsy showed the following changes: A thrombosis of the superior longitudinal sinus, and small disseminated thrombi in the veins of the pia mater. There was an intense general congestion of the pia-arachnoid membrane.—*Brit. Med. Journ.*, November 11, 1899.

Interstitial Gestation: Fatal Rupture.

Charles Smith of Des Moines (New York *Med. Rec.*, September 9th, 1899) was up at midnight to see a patient in a state of collapse. She was 24 years old, and married one year. Menstruation had been regular until the past two months since which time she had seen no show, nor had there been any discharge of any kind from the vagina. On the previous night the patient went to a ball, danced all night and ate a hearty supper. Next day she worked hard washing, baking and scrubbing, and then walked nearly a mile, when she was taken with abdominal pain and became faint. This soon passed away, and she walked home. Several stools were passed in the evening; defæcation was painful. The abdomen was tympmpanitic and tender, pains as in threatened abortion occurred. The uterus was about double the normal size, with a soft, flabby cervex, the cervex not dilated. The pains were suspected by Smith to be due to indigestion. Shortly after he left the patient went to the closet, screamed, and became faint; other attacks followed; at length attended with convulsions, after which she became more conscious and died. The peritoneum contained three quarts of blood, mostly fluid. The uterus was extensively lacerated posteriorly, and just to the right of the median line. The tubes, ovaries, and ligaments were perfectly normal, except that the right tube and ovary were drawn a little higher by the greater development of the uterus on that side. A ruptured amniotic sac was found containing chorionic villi, which had no connection with the uterine cavity where, on the other hand, a decidua was found. The cervix contained a mucous plug. The tissue around the rent in the interstitial sac showed advanced fatty degeneration.—*Brit. Med. Journ.*, Aug. 19, 1899.

Influence of Maternal Inebriety on the Offspring.

W. C. Sullivan (*Journ. of Ment. Sc.*, xlv., 489, July, 1899) has investigated the history of the offspring of chronic drunkards (women) in the Liverpool prison, and has tried to eliminate the cases in which the alcoholism was complicated by other degenerative factors. Among the many interesting points which the inquiry brought out were the following: The death-rate among the infants of the inebriate mothers was nearly two and a half times that amongst the infants of sober women of the same stock. In the alcoholic family there is a decrease of vitality in the successive children; for instance, in one family the three firstborn children were healthy, the fourth was of defective intelligence, the fifth was an epileptic idiot, the sixth was deadborn, and the seventh pregnancy ended in an abortion. There was a sensibly higher death-rate in cases where the maternal inebriety was developed at an early period. Sober paternity had little influence, and in face of maternal drunkenness might be almost neglected as far as the vitality of the offspring is concerned. Conception in drunkenness had a distinct influence, as was shown by the fact that in the seven cases in which the condition was noted, in six the children died in convulsions in the first months of life, and in the seventh case the infant was stillborn. On the other hand, imprisonment during pregnancy, if the imprisonment began early in the pregnancy and lasted nearly all the time, seemed to diminish the evil effects; but the difficulties in drawing conclusions regarding this point were great. Of the children of drunken mothers that survived beyond their infancy, 4·1 per cent. (a very high percentage) became epileptic (9 out of 219). These results show the danger to the community of the female drunkard.—*Brit. Med, Journ.*, November 11, 1899.

Death from Intra-Uterine Injection of Glycerin.

The patient was a woman, about thirty years of age, and pregnant for the second time. At about the second month of gestation she resolved to terminate the pregnancy by the intra-uterine injection of glycerin. The quantity of glycerin used is uncertain, but it is said to have been but a few drams. This was introduced into the uterus by means of an English catheter, with a syringe attached. The ovum was expelled on the following day. Within twenty-four hours after the injection she was seized with moderate chills, and the temperature rose to 103 degrees F.; for the next two days it ranged between 103 degrees and 104 degrees F. From the third day the temperature did not exceed 99 degrees, and for the most of the time was subnormal. After the second day there were frequent vomiting and diarrhœa. On the third the teeth were covered with sordes, the saliva was blood-stained, and a profuse hemorrhage occurred from the nose, which was controlled only by plugging. The vomitus consisted of coffee-ground material, and later the stools were tarry. The urine was from the first almost wholly suppressed, and was of a dark-red color from the presence of hæmaglobin. Death occurred on the sixth day.

The dangers of Pelzer's method are well-known, and they have led to its abandonment. Luchsinger, Schwan, Filechne, Lébédeff, and Wiener have shown that glycerin is liable to cause disintegration of the red blood cells. The destructive action of the glycerin upon the red blood corpuscles obviously cannot be prevented by any care that can be used in the intra-uterine injection. Affanassiew's experiments would seem to prove that the blood is more surely disorganized when the drug is absorbed through the decidua than if thrown into an open sinus.—Dr. Charles Jewett, Brooklyn.—*Modern Medical Science*, July, 1899, in the *Homœopathic Physician*, September, 1899.

Micro-organisms of the Mouth of the Newborn.

Giuseppe Campo (*Pediatria*, Naples, vii., 229, August, 1899) has carried out a series of researches on the micro-organisms of the mouth of the newborn in order to ascertain (1) if the mouth at the moment of birth is free from germs; (2) the development of germs along with the establishment of the primary functions of life; and (3) the isolation of them and their pathogenic action. Reference is made to the work of Vignal, Biondi, Sanarelli, Freund, and Kreibohm, and the methods used are described. The contents of the mouth were taken at the moment of birth (the head of the infant being still on the perineum), four hours later when respiration had been going on, an twenty-four hours later when lactation had been commenced. To infants were examined at these three times, and twenty-one others were examined at one or other of the times named. Campo concludes that the mouth is sterile at the time of birth, for out of twenty-one cases in which the buccal contents were examined at the moment of birth, in six no germs were found; the fifteen cases in which organisms were found do not in his opinion invalidate the conclusion, for in some of these the contents were collected by the midwife in attendance, and in others it may be that germs gained entrance from the maternal vagina during labour. The effect of respiration was that the mouth immediately lost its asepticity, and sixteen observations made about four hours after birth demonstrated that the ordinary bacteria of the air find in the mouth a suitable soil, and multiply with great rapidity; they were the bacillus mesentericus vulgatus, the bacterium termo, and the bacillus ulna. The first effect of lactation was found to be a diminution in the number of germs, possibly due to the mother's milk washing them downwards into the gastro-intestinal tract; but its second effect seemed to be to increase the number of the kinds of germs met with. This effect Campo thinks is the result not of new varieties being introduced in the milk, for the milk direct from the breast is sterile, but of a power conferred by the milk upon the buccal contents of growing new kinds of germs. The organisms found were in order of frequency; the bacillus mesentericus vulgatus, the bacterium termo, the bacillus ulna, subtilis, leptothrix, and lineola (?), and three non-identified germs, to which the names of bacillus *x*, and coccus *y* and *z*, have been given. It was further discovered that none of these micro-organisms had any pathogenic properties, for intraperitoneal injections of cultures of them into guinea-pigs did not produce any phenomena indicating virulence, save a slight diminution of the body weight. The characters of the non-identified germs and their cultures are fully described; bacillus *x* and coccus *z* caused passing loss in weight.—*Brit. Med. Journ.*, Oct. 21, 1899.

The Causes of Immunity against Tuberculosis in High Altitudes.

Mitchell and Crouch (*Journ. of Path. and Bact.*, May, 1899) working at Denver at an altitude of 5,290 feet, found experimentally: (1) That the tubercle bacillus, as expectorated on a sandy soil, is still virulent after thirty-five hours' exposure to the direct rays of the sun. Koch, working (presumably) with pure cultures of the bacillus, found that it was killed in a few minutes to several hours, according to the thickness of the layer in which it was exposed. (2) That such sputum on a sandy soil has lost but little of its virulence after twenty hours' exposure. (3) That if the exposure extends beyond twenty to thirty-five hours the virulence is gradually diminished, and finally lost. They therefore conclude that Koch's statement has given sanitarians a false sense of security, and that as a fact the sputum as expectorated by consumptives at such an altitude as Denver has ample time to become desiccated and blown in the atmosphere before it has been robbed of its virulence. Now since there unquestionably exists a great degree of immunity against tuberculosis in this region and at this altitude, another explanation than the disinfecting action of the sun through a rarified atmosphere must be sought for, and is probably to be found in the effects of the climate on the vital forces of the individual: (1) The absolute and relative moisture in the atmosphere is low, and this together with the lessened atmospheric pressure and almost constant winds greatly facilitates evaporation. This abstraction of moisture takes place very rapidly from the pulmonary alveoli, and though these could scarcely become too dry to serve as a nidus for the tubercle bacillus, the constant evaporation must produce unfavourable conditions for its development. The absence of moisture acts also beneficially on the organism as a whole. Thus the sensation of temperature is measured not by the ordinary but by the wet-bulb thermometer. For instance, the air thermometer may register the same at Denver as at the sea level at Washington, but the heat actually felt by those in the former place may be 32° F. or less than is felt by those in the latter. As a result the heat at an altitude is not enervating. (2) The lessened atmospheric pressure at altitudes causes a dilatation of the cutaneous and mucous capillaries. The pulmonary capillaries are dilated, and the blood stream through them is slowed, so that it can better give battle to the invaders; the thorax is expanded, and there is an increased frequency of respiration to compensate for the diminished amount of oxygen in the rarified air. The heart's action is also increased for the same reason. The body warmth is continuously lost in large quantities, and to replace it, other things being equal, the appetite improves, metabolism is more rapid and complete, and the need for nourishment greater. The evaporation increases the specific gravity of the blood, and in a given quantity the number of red corpuscles and the percentage of hæmoglobin are said to be increased. Indeed the same factors which tend to the healing or retarding of cases of phthisis which seek out high altitudes, account for the immunity to phthisis of those who live there.—*Brit. Med. Journ.*, Oct. 21, 1899.

Wounds of the Heart.

An inquest was held on Oct. 14th by Dr. Danford Thomas on the body of a Russian lady, aged 53 years, who died suddenly on Oct. 12th after complaining of severe pain over the heart and of inability to breathe. A post-mortem examination revealed that the pericardium was full of blood and in the left ventricle there was found an ordinary sewing needle which had perforated the wall of the ventricle. The son of the deceased in his evidence said that four months previously his mother complained of a needle having entered her ear as she lay on the sofa. It is not likely, however, that the needle gained admittance to the heart by this route. Wounds of the heart are recognized now as more amenable to surgical treatment than was acknowledged to be the case a few years ago. In 1897 Rehm of Frankfort and [illegible]rrozzani of Rome were among the first to teach that wounds of the heart, which till then were considered invariably fatal, could be brought within the scope of surgical treatment. More recently Loison succeeded in collecting and tabulating the records of 90 cases of wounds of the heart and pericardium in which the diagnosis was established either at the operation or in fatal cases by post-mortem examination, and in 78 of these cases it was found that the myocardium itself was injured. In the vast majority of these 78 cases death was the result and this was generally the case whether surgical interference had been tried or not before death. Suture of the heart was only practised in five cases, with the result that three patients died and two recovered, so that the result of early surgical interference were by no means unfavourable. In one case alone recovery followed without an operation having been performed, but the man was assassinated later and the necropsy which was made thereafter showed a scar healed in the heart the result of the wound which had been received before. Loison also reports a case where he attempted to remove a bullet which was lodged in the heart, the situation of which had been indicated and located by the use of Roentgen photography. The pericardium was opened and drained, but the bullet not being visible (superficially) in the heart muscle further procedure was abandoned. The patient recovered perfectly after the operation and was alive at the time of the publication of Loison's article (February, 1899). Ophulus of San Francisco, who reports an interesting case of a patient who lived for some time with a foreign body in his heart, has collected from medical literature 47 other instances in some of which the patients had been known to live for several years after the injury. Pagenstecher of Elberfeld has recently added one more to the list of cases that have been successfully treated by surgical operation, including suturing—viz., an instance of a heart-wound three and a half centimetres long resulting from a stab inflicted near the apex of the heart on a boy aged 17 years. The records of cases taken from these various sources point on the whole to the hopefulness of early and prompt surgical operation in cases of wounds of the heart and must serve to encourage surgeons who have hitherto hesitated to resort to operation on the pericardium and heart.—*Lancet*, Oct. 21, 1899.

Nitrogen in Peace and War.

It seems to be a perversion of real progress that human ingenuity should be turned to the best means of destroying human life and to obtaining maximum effects in this direction. It is well, however, to bear in mind that the evolution of the terribly dynamic explosives has owed its rapid progress not so much to the frequency of war as to the fact of their immense utility in completing the work of exploration, in opening up hitherto unapproachable areas as in the construction of roads through a rock-bound country, and in loosening stubborn deposits containing a wealth of material. Indeed we do not hesitate to say that the high explosive is as much a weapon in the time of peace as it is in the time of war. Strange as it may appear it is that most inert of chemical elements, nitrogen, which exists so abundantly in the atmosphere we breathe, that is the essential constituent of modern explosives, such as expand on sudden combustion from nothing, so to speak, to infinity. It is the very inertness of nitrogen which makes it such a potentiality. It resents company and on the slightest provocation quits this company and returns to the gaseous state, occupying an enormously increased volume. This instability of nitrogen in a solid compound explains the enormous power of the modern nitro-explosive. Recent accounts from the seat of the war in South Africa have shown what a weapon in skilled hands is lyddite. We believe that the preparation of lyddite is a Government secret, but it is generally known that it consists of picric acid compressed into the smallest bulk by fusion. Chemists have always held the theory that the nome of force of an explosion is secured by supplying the oxygen in the compound with an equivalent amount of combustible matter. But in the case of picric acid this is not so, for the oxygen necessary to form carbonic acid, the complete product, could produce a double volume of the incomplete product, carbonic oxide, which therefore would effect a much more considerable amount of work. Eventually the carbonic oxide burns into carbonic acid in contact with the air by the action of the flame of the explosion. Picric acid is made by acting upon carbolic acid with nitric acid. It possesses an enormous explosive force while curiously enough it is insensible to shock and its comparative stability is remarkable so that it may be transported with a minimum of risk. This is not so when it is mixed with other substances. Lyddite is of the same class of explosive as melinite, to which, indeed, it is closely related. On account of the properties just described it is safe to use when hurled in shells. We all cherish the hope that the day is not far distant when our swords shall be turned into ploughshares; and may we not hope also, to put it into language which modern science supplies, that the world's supply of nitrogen may no longer be used for the purposes of war but for the purposes of peace, and that in the near future we may turn our attention to utilising this wonderful element exclusively towards providing for the food supply of the world? This is a problem which Sir William Crookes has suggested might be solved by converting the nitrogen of the air into nitric acid and eventually fertilising nitrate by the aid of electricity generated by colossal natural power such as exists in the fall of water at Niagara.—*Lancet*, Nov. 11, 1899.

Roentgen Rays in the Diagnosis of Diseases of the Heart and Aorta.

Schuster (*Therap. Monats.*, August, 1899) has employed the x rays extensively in his practice at Nauheim, in addition to the usual methods of percussion, auscultation, and palpation. Various inferences may be drawn from the character of the shadow produced by the heart; and also from the relationship between the latter and shadows due to other causes (vertebral column, sternum, diaphragm, ribs). For instance, it is demonstrable that the heart does not rest on the diaphragm, but that it is exclusively supported by the large blood vessels. Under normal conditions a free space exists between the heart and diaphragm during inspiration. Benedict, who was the first to call attention to this fact, observed further that when the heart became enlarged this interspace was obliterated, and that when adhesions existed between the diaphragm and pericardium, the former could not move independently of the heart. It is important sometimes to ascertain exactly the position of the heart; for instance, in cases of transposition of the viscera, and displacements of the heart caused by fluid or growths. It is also useful sometimes to know whether the enlargement of the heart has occurred in the horizontal or vertical direction. The extent of the shadow gives the proportionate size of the heart, but it does not always give the exact cardiac dimensions; "the heart is not as large as its shadow;" it was found that the further the plate was removed from the tubes the more nearly did the shadow coincide with the actual size of the heart. It is only by comparing, with the help of certain fixed points, the relationship between the various shadows caused by the heart and the structures in the immediate neighbourhood that the real size of the heart can be ascertained. The author goes on to describe some of these fixed points: the nipple, for instance, can be made prominent by attaching a penny to the skin. The spinal column and sternum give the most prominent shadows. Normally the right side of the heart extends one-third from mid-sternum, whereas the left side extends two-thirds from the same point. The increase in size of the heart cannot be measured in centimetres, but it can be readily seen in the photograph. Several photographs are given illustrating the points mentioned above. In emphysema the determination of the size of the heart by the *x* rays is of great diagnostic value. The cardiac movements can be observed; it is often possible by this means to ascertain the strength of the cardiac muscle. In addition to the knowledge we gain concerning the position, size, and movement of the heart, the rays can also detect abnormalities of the large blood vessels, such as persistence of the ductus arteriosus, sclerotic changes in the coronary arteries. The diagnosis of commencing aneurysmal dilatation has been facilitated by the employment of Roentgen rays. The author says it is possible to estimate the seat and size of the dilatation. Slight dilatations occurring in the arch of the aorta are not uncommon. They are often seen in cases of aortic insufficiency. In this condition the heart's action is increased, the blood is propelled with increased force into the aorta, and this, combined with the loss of elasticity in the wall of the artery, causes local weakness and bulging. The pulsations of the aorta are much more marked in these cases than in true aneurysms.—*Brit. Med. Journ.*, Nov. 4, 1899.

CLINICAL RECORD.

Indian.

A CASE OF RENAL COLIC CURED BY *LYCOPODIUM.*

By Dr. M. L. Sircar.

Babu H. P. M., aged 46, resident of Calcutta, by occupation a clerk, came to me on the morning of the 1st October 1899, with the following complaint. He has been suffering for two months from a pain which runs down from the region of the left kidney to the left testicle. He suffers also from great windiness, passing flatulence upwards and downward constantly. His general prostration is very great. All these symptoms are gradually increasing; and the renal pain is occasionally very severe. Gave him *Lycopodium* 16x.

4th Oct. Called in the morning and reported that the pain from the kidney down to the testicle is nearly gone, and that the flatulence has become less, though still he has to eructate much. Continued *Lycopodium.*

8th Oct. Called in the morning as usual. Pain entirely gone, does not feel the windiness, though he has to eructate but much less frequently. Prostration is also decidedly less. Continued medicine.

17th Oct. Presented himself as usual with all the symptoms nearly gone.

22nd. Cured.

Remarks.

There are two points of interest in this case. First, the renal colic was left-sided, and yet *Lycopodium* effected a cure. The general belief amongst homœopathic practitioners is that *Lycopodium* is more suited for right-sided affections. Dr. Nash says—"*Lycopodium* affects the right most, or at least the troubles begin on the right side …… Any complaint that begins on right and goes to left makes me think of *Lycopodium.*" Accordingly we find Lilienthal recommending it for renal colic when pain extends down (right) ureter to the bladder. In our case the pain extended from the left kidney to the left testicle. It is true that "the 'sides of the body' subject is of more account than some imagine," and that "drugs have an affinity for particular parts, organs and even sides of the body," but we must study the whole pathogenesis of a drug and not make hasty generalizations from a few instances, and we must also see that we take note of side with reference to particular symptoms.

The second point of interest is that the 16th decimal dilution of *Lycopodium* that was prescribed was made from a mother tincture which I had myself prepared from the pollen with strong rectified spirit. The phial, in which the pollen and the spirit were mixed in the proportion of one to five, was every day, two or three times, strongly shaken for over two months, at the end of which the clear supernatant liquid was drawn off, and found to be saturated with the oil of the pollen, as evidenced by the milkiness produced when dropped on water. Dr. Hughes says—"It seems probable that the medicinal virtues of Lycopodium reside in this peculiar oleaginous matter with which its sporules are filled; and hence the comparative inertness of all preparations of the drug which do not involve complete fracture or solution of the investing envelope. No tincture but an ethereal one is found to effect solution." But here we had a strong spirituous solution of the drug which did hold the oleaginous matter, and gave effective therapeutic result. Possibly the frequent violent shaking for over two months may have helped the solution. This should serve as a hint to pharmaceutists in preparing dilutions of Lycopodium. There does not appear to be any necessity for triturations which are always a troublesome affair.

Foreign.

CASES BY A. L. BLACKWOOD, M.D.

CASE I. *Asthma*—Mrs. M., aged thirty-nine, when two months old developed broncho-pneumonia which left her a subject of asthmatic attacks.

When seven years old she had whooping cough, during and after which the asthma was greatly aggravated, but by going south she obtained some relief and on her return north was subject to attacks upon exposure to damp weather. When twenty-three years old she developed her first attack of typhoid fever, at which time it was thought she would die, the asthma being very troublesome; but after some months was back to her normal condition, having only an occasional attack. During the month of June she came down with the second attack of typhoid fever and again her old enemy appeared; at the end of the fourth week she showed some improvement, for two or three days, and then without any cause there was a relapse; all the time the asthma was becoming more pronounced and she could not secure any rest at night.

Various remedies, which appeared to be indicated, were tried in vain; while they might give partial relief for a short time yet nothing permanent was attained. As the fever had now passed the fifth week and was not declining and the asthma in the meanwhile became worse it was evident that something must be done to control the existing conditions. After a careful review of her history, on account of the tendency to faulty reaction after disease, and also because of a similar tendency in her family, and after a consultation with other physicians it was determined to give the patient *Psorinum* 1m., one dose, and stop all other medicine, as they were doing no good. The results were all that could be desired; she slept that night and every night since; there was a gradual decline of the fever. She is up and has no return of the asthma during the recent damp weather. A more recent report gives further encouragement as to a cure.

CASE II. *Epilepsy.*—Mr. C., aged forty-one; employment has been that of park policeman. Ten years ago he fell, striking on the head. A short time following this injury he began to have spasms; he would fall wherever he happened to be; as he was falling there would be a wild cry; he would froth at the mouth and bite his tongue; these would be first tonic and then clonic in character; they would last about fifteen minutes, and would be followed by a period of coma usually lasting two hours. At first the attacks were about two months apart, but gradually became more frequent, and two years before coming to this clinic he was obliged to give up his employment.

There is no neurotic tendency in his family history; he is as fine a specimen of manhood as can be seen; is of light bilious temperament, but presented a dejected, childish appearance, as he was led by his mother, afraid of being alone, and will not go to bed unless his mother is present. His clothes are stained with urine, which he is unable to retain. It began at first to pass during the attacks, but now cannot be controlled at any time. He was given *Kali phos.* 6x for one week. He then reported that he had better control of his urine and had more nerve. The next two weeks he made great improvement, but had one more spasm. *Natrum sulph.* 200x was given night and morning for one week, at which time he was given placebo and no more medicine. Four months have now passed. There had been no return of the spasms. He has perfect control of the urine. The last few times he came to the clinic alone, and has returned to his work.

Arnica montana has on several occasions controlled meningitis due to traumatism, but it has never been of any service to me in epileptiform seizures. Here natrum sulph. has permanently cured two cases undoubtedly epileptiform in character and traumatic in origin, and I believe it has cured this case; at least, it has stopped the seizures that were occurring about once a week.

CASE III. *Neurasthenia.*—Mrs. H., aged thirty-nine, has not felt well for the past year; she complains of headache which has no definite location and changes from one part of the head to another; it is confined to a small point and worse from drinking coffee or inhaling tobacco smoke; it is relieved by pressure on the painful point. She is extremely nervous and the least thing annoys her so much that she goes away and cries; her appetite is good, but she feels sleepy after eating and she is constipated. She has a pain and a tired feeling in the small of the back, which extends down the legs; she was given *Ignatia* 3x three times a day; at the end of a week she reported the headache was better, and there was great relief in the nervous symptoms; she still complained of the distress in the back extending down the legs, and she feels better when doing something, not that the distress is any less but the mind being occupied, she does not notice it. *Helonias* 3x cured this woman. This is a remedy I have used with success in cases of albuminuria, diabetes and uterine prolapsus with congestion when the leading symptom has been a tired and lame sensation in the back extending down the legs.

CASE IV. *Cardiac hypertrophy with Dilatation.*—Mr. C. aged twenty-seven, had enteric fever and pneumonia in South Africa about six months ago; since then he has felt weak and exhausted; the body is cold to the touch and is of a purple color; breathing is difficult, the least excitement causes dyspnea and gas forms on the stomach after eating; the bowels are constipated and there is pain in the lower portion of the abdomen.

Physical examination revealed a rapid and forcible cardiac action; the force of the apex beat is increased and to left of the normal; there is epigastric pulsation; the pulse is hard, full and irregular; the area of cardiac dullness is increased both to the right and to the left; no valvular changes are discernible, but the first sound is loud and ringing. From the history of the case and the physical examination we concluded that the right side of the heart was involved. *Convallaria* was given four times a day. After a week the patient reported an improvement; breathing was not so troublesome; coldness of the body had gone; the pulse was more regular and not so full. After two weeks' time the improvement seemed so great and the relief so marked that the patient thought himself well.

Convallaria was given in this case on account of irregularity and palpitation of the heart, the marked involvement of the right side, the great dyspnea and venous stasis.

A CASE OF TONSILLITIS CURED BY *APIS.*

By C. D. Collins, M.D.

Mrs. T., age twenty-three, American, married, personal and family history good. This patient is a perfect blonde, almost an albino, with soft skin and lax fibers; she is of the lymphatic temperament and has a tendency to glandular enlargements; she applied for treatment May 1, for throat trouble, saying that for several months her throat seemed full and sore. She is a vocalist, and after even a short vocal exercise her throat would be sore for several days. Examination revealed a large, spongy tonsil on the right side, about two and one-half times the normal size; this tonsil did not look like an ordinary one but seemed unusually spongy and edematous, something like a fungous growth. The opposite tonsil was slightly larger than the normal but more natural and firmer in consistency; her general health had not been very good for several months past.

I assured her that removal of this tonsil was necessary and that, once amputated, she would have no further trouble from it; accordingly the throat was sprayed with a carbolized solution and the amputation was made with Mathieus tonsilotome. The spray was again used freely and the patient was sent home to use an antiseptic gargle daily. No unusual developments occurred until about ten days later when I noticed that same tonsil was enlarging again and in less than a month it had grown out a little larger than the original tonsil. My first thought was to amputate again, but a moment's reflection decided me to try other measures.

Belladonna 3x, 6x and 30x were all tried in vain; glycerole of tannin was used locally every day, and various spray solutions were employed, but to no effect. *Calcarea carb* 30x and *Mercurius biniodide* 3x were also of no service. The spongy character of the growth, the edema and the sticking, stinging pains finally suggested *Apis mellifica.* This remedy I then gave in the sixth decimal potency four times daily, with entire relief in a few days' time. In about two weeks the fungous growth was practically gone, and a complete recovery eventually followed.

I report this case to show you another proof of the curative power of the remedy which is homœopathic to the case. I firmly believe that there was a blood and serum change in the system of that lady which was met and overcome by apis mellifica, and it cured the case. I also believe that had I amputated the second time, or even a third time, that the tonsil would have enlarged again and again, until I removed the underlying cause by the remedy homœopathic to the case, which in this case was apis mell.—*Clinique,* Oct. 15, 1899.

Gleanings from Contemporary Literature.

ON "DOUBLE CONSCIOUSNESS."

By Theo. B. Hyslop, M.D.,

Medical Superintendent, Bethlem Royal Hospital; Lecturer on Mental Diseases, St. Mary's Hospital; Demonstrator in Psychology, Guy's Hospital.

Introduction.

In studying this complicated and difficult subject of double consciousness I have sought—not to emphasise the rarer and more abnormal extremes of the reported cases—but rather to bring forward such observations as may possibly help to bridge the apparently impassable gulf between double consciousness and more ordinary experiences. Even in the most strikingly abnormal cases there are indications that it is possible to interpolate an innumerable series of gradations between them and health.

I have endeavoured to confine myself to the subject of double consciousness, or double personality, and beyond brief analogies derived from a comparison with dream, somnambulistic, epileptic, amnesic, and insane states I have not dealt with the enormous mass of information and side issues at my disposal. Nor have I reopened the much-vexed question as to whether unconscious cerebration can go on without any obvious mental accompaniments, as in the instances of automatic movements derived from habit, and termed by Griesinger "psychical reflex actions."

For convenience sake I will first briefly enumerate what appear to me to be the various types of double consciousness, and conclude with some of the psychological and physiological theories derived from consideration of the cases.

The cases appear to me to fall under the following seven types, namely:

I. Those occurring in early life, and in which the abnormal state is preceded by night terrors, somnambulism, or by both.

II. Types in which the abnormal state is preceded by profound sleep, and in which the normal state is only again reached after prolonged sleep.

III. Types due to temporary or periodic amnesia acquired as the result of accident, injury, or disease.

IV. Epileptiform types.

V. Insane types.

VI. Hysterical anæsthetic types.

VII. Types in which, during the abnormal state, the subject assumes the possession of a mediumship.

I.—*Types seen in childhood in which the condition is preceded by night terrors or by somnambulism, or by both:*

Case I.—J. R. G., a schoolboy, aged 14.

Family History.—Cousin in Morningside Asylum, demented. Sister, aged 11, hydrocephalic. Uncle also hydrocephalic.

Personal History.—The patient was the fifth child; birth natural; mother much worried and troubled at the time. No convulsions. Used to talk in his sleep. Suffered from night terrors, when he would scream and become agitated. Occasionally incontinent. This patient never mixed with other boys or joined in their games; he was always very excitable, and spoken of by the other boys as "mad." He was brought to me on account of a propensity he had of stealing money, stamps, etc., from the other boys, and when convicted and reproved for this he seemed to have no memory of the events at all, and was much distressed at the circumstances.

Condition when First Seen.—He was a bright intelligent-looking boy, but with rather a nervous aspect, slight hesitation of speech. With regard to his special senses, he had diplopia, the chart of which would not fit in with paresis of any one muscle or group of muscles supplied by one nerve. Mr. J. B. Lawford kindly examined the case for me and found the diplopia to be due to irregular astigmatism. There were no ophthalmoscopic evidences of disease. The pupillary reactions were rather sluggish for a boy of his age, but not otherwise abnormal. Glasses were prescribed to correct the error of refraction, and these did away with the double images. He had suffered also from various subjective symptoms. When he lay down he used to see faces which, however, he knew to be imaginary. He also complained of whizzing sounds in his ears, and music. At times these sounds were so real to him that he could not appreciate their subjectivity. Taste and smell were normal. With regard to common sensation, he complained of tingling and a certain amount of numbness in his right hand. At the time I saw him I could not detect any anæsthesia. His mental state was nearly normal. After working at his books for some little time he would become muddled, and it was usually after the strain of work that he had these nocturnal visual phenomena. After one of these nocturnal attacks he would during the daytime do various impulsive things. On one occasion he took some poison with the intention of destroying himself. He told me he was perfectly happy, and that he could not account in the least for what was alleged against him, namely, his attempt to injure himself and his propensity to steal from other boys.

This boy appeared to be one of the group of unstable adolescents who become criminal or not according to surroundings, and it is of interest to note the early occurrence of night terrors followed by abnormal day states, during which he had moral and volitional perversions of which in the fully awake state he had no memory.

Case ii.—V. E. W., schoolboy aged 14.

Family History.—Father died of cancer in the bowels. He was also very intemperate. Mother was ill just before confinement and had a fall just at the time of the birth of the child. He has two brothers living, one of whom suffers continually from nervous headaches.

Personal History.—He has always suffered from pain in the head. As an infant he was very precocious, always suffered from night terrors; he had no convulsions during teething, but from a very early period has had nystagmus. At the age of 7 he had some brain affection which was attended with great pain, confusion, hyperæsthesia of all his senses, and ever since that time he has been subject to bad headaches. In February, 1896, he came under my care as a schoolboy, but nothing abnormal was detected for some considerable time. He was a strong, healthy, industrious lad. About Christmas, 1898, he had an attack of stupidity during school hours and could not be made to answer questions; in the course of a few hours this passed off and he became natural. One night after the other boys had gone to bed he was found sharpening a knife with intent to kill. After a desperate resistance he was overpowered and placed under supervision. Subsequently, he remembered nothing whatever about the incident.

Condition on Examination.—I could not discover any mental or moral defects, with the exception of the failure to recollect either the period of stupidity before-mentioned, or the incident when he had the homicidal tendency. He had no physical symptoms except perhaps very slight giddiness on standing with his feet together, but this may have been due to the fact that he had been confined to bed for several days. His special senses were apparently normal, with the exception of some anæsthesia of his hands and feet and pain of the back of his head. Dr. Savage also examined this boy and found nothing organic the matter with him. He regarded the state as resembling some epileptic state, and recommended that he should be removed from the school, put to some easy daily work, and take bromides for a time. He was examined ophthalmoscopically by Dr. Savage, my colleague Dr. Stoddart, and myself, and no changes in the disc or trace of brain disease could be detected.

This case resembles the foregoing one in the early occurrence of night terrors and the subsequent development of an abnormal unconscious state during which the individual was impulsive and dangerous; followed by the normal state with absolute failure to recall any of the incidents which had occurred in the morbid state.

CASE III.—R. P. S., male aged 19.

Family History.—One sister hysterical. Grandmother very intemperate.

Personal History.—Since the age of 3, when the child had a series of convulsions he has been alternately lethargic and excitable. He also used to suffer from night terrors and occasionally somnambulism. On one occasion in the middle of the night he rushed into his mother's bedroom with his Bible in his hand, exclaiming that he had "a truth from God." During the daytime he would also have strange moods of depression and sullenness when he would throw things at his sister and threaten to injure her. Occasionally during those attacks he would hear voices to which he responded, and apparently he had visions. Subsequently, when he recovered he had no memory either of the somnambulistic attack or of the morbid day attacks.

Condition when First Seen.—He was very anæmic, rather undersized, with an incipient beard. He could not keep to the point in conversation. He was very voluble and excessively cheerful, and thought the hospital an annexe of Buckingham Palace, whilst the attendants and doctors were various royal and aristocratic personages, such as the Kaiser, Prince of Wales, Earl of Aberdeen, etc. He also complained that sometimes at night he felt a peculiar sensation running up his legs, which he described as being at one time like electricity at another time as being a sensation of cold or numbness. During his stay in Bethlem of nearly four months he remained in this condition, and when he recovered he denied that he had ever had any delusions as to his own identity or as to the identity of others.

This case is somewhat similar to the preceding two cases, and forms a connecting link between night terrors, somnambulism, automatism, and actual insanity.

Case iv.—A. M., an intellectual and highly cultivated lady, was admitted to Bethlem suffering from melancholia with anergia.

Family History.—Her father was alcoholic; otherwise her family history was good.

Personal History.—Three years previous to her admission she became somnambulistic. She used to make a great noise during the night by banging at her door, shifting furniture, etc. At times she would bump her head on the floor, but never really hurt herself. During her somnambulistic state she would answer questions intelligently and to the point. When comparatively free from somnambulism she suffered in other ways—for example, from indigestion and symptoms of gastric ulcer. Under treatment by hypnotic suggestion she improved somewhat, but subsequently she relapsed into her somnambulistic habits. Two years from the onset of her first symptoms she began to write letters during the night. These letters were badly written, and only faintly resembled her ordinary handwriting. Subsequently she would do and say things during the day-time of which she had no recollection when in her normal state. Again hypnotic suggestion was tried, but it was found that after the experiment she could not be roused for a period of nearly six hours. When in her normal state of wakefulness she failed to recall any of the events of her somnambulistic state. During the latter state, on the other hand, she could give a connected account of her waking state. Subsequently she developed a third state, somewhat resembling *petit mal*, during which she would steal and hide things which did not belong to her.

There is something to be said in favour of the hypothesis that dual consciousness is only complete somnambulism. The successive awakening of the senses constitutes a gradation from ordinary sleep to complete somnambulism, which gives to the person studied the appearance of leading a dual life. Questions of criminal responsibility arise in those cases in which criminal acts are committed in the hypnogogic, or in the somnambulistic state, and undoubtedly there is not only a close analogy between some dream states and insanity, but the analogy also extends to somnambulism.

The night terrors mentioned in these cases can be studied on Hughlings Jackson's hypothesis, and we may assume that the sleep, though apparently profound, has really only suspended some of the highest level functions, leaving uncontrolled play to the lower levels. During the fully awake state the highest level has little or no knowledge (so to speak) of what happened when only the lower levels were at work, but when the child has a repetition of the night terrors there is apt to be another uncontrolled and even facilitated reproduction of the same character. Sometimes it is almost impossible to say whether a given attack is night terror or epilepsy. Certain it is, however, that not infrequently night terrors are followed by hallucinations, somnambulism, and epilepsy, and it is to add to the instances of this sequence that I have reported the preceding cases.

II.—*Types in which the abnormal states are preceded by profound sleep, and in which the normal state is again reached after prolonged sleep.*

(a) Dr. Weir Mitchell's case of Mary Reynolds, a melancholic woman who was found one morning in a profound sleep from which she could not be aroused. When after about eighteen or twenty hours she was at last awakened she was to all intents and purposes as if for the first time ushered into the world. She had no memory of the past, and had to be taught everything afresh. This state lasted for five weeks, until one morning after a protracted sleep she awoke and was herself again. Subsequently she had these alternations from one state to another at intervals of varying length for fifteen or sixteen years, until eventually she remained in the second state.

(b) Combe reported the case of a girl, aged 16, in which the first symptom was a propensity to fall asleep in the evenings. This was followed by the habit of talking in her sleep on these occasions. Later she frequently passed from sleep into the abnormal state, and circumstances which had occurred during the paroxysm were completely forgotten by her when it was over, but were perfectly remembered during subsequent paroxysms.

(c) Combe also relates the case of a young lady who possessed naturally a very good constitution and arrived at adult age without having it impaired by disease. Unexpectedly and without any forewarning she fell into a profound sleep which continued several hours beyond the ordinary term. On waking it was discovered that she had lost every trait of acquired knowledge and she had to relearn everything. After a few months another fit of somnolency preceded her return to the normal state. She was as unconscious of her double character as two distinct persons are of their respective natures. During four years or more she underwent periodical transitions from one state to another, the alterations always being consequent upon a long and sound sleep.

III.—*Type of alternating personality mainly dependent on alteration of memory, etc., due to traumatism or disease.*

After an injury or shock the power of recall of mnemonic images may be inhibited, and recent or remote events may, for the time being, be quite obliterated. According to Ribot this inhibitory process may extend both backward and forwards, and there may be, or there may not be, recovery from the loss. It is assumed that either the registration of anterior states is interfered with or effaced; or if persisting, their power of revivification by association with the present is destroyed. It is to be presumed that in organic brain disease the former is the case, whereas in most of the known cases of double consciousness the latter is the probable explanation, and the coupling apparatus between the past and present is rendered inert by some defect in its organisation. Numerous instances are recorded in which—through injury or shock—a blow on the head, a fall, a fever, or an acute illness may produce effacement from the memory of events of either recent or remote occurrence.

Case v.—B. B., aged 56, dressmaker.

Family History.—Nil.

Personal History.—She was knocked down by a cab in October, 1896; she fell on the back of her head, which was much bruised. She was kept in bed for a week after the accident. She fancied there were people in the room, and called them by their Christian names, when there were really no people there. She also insisted that she had been confined, and would nurse a pillow as the baby. On several occasions she tore up a blanket and sheet, and also a nightdress. She recognised no one except her husband, and occasionally one of her sons.

Condition on Admission to Bethlem.—Her tongue deviated to the right. Her chest was rigid with marked emphysema. Her special senses were difficult to test on account of a certain amount of confusion. Her left eye had better vision than her right. It was found that the appreciation of blue and yellow was very defective. Her hearing also was very defective. A watch could not be heard with the right ear, and only on contact with the left. There was also some anæsthesia of both hands. Her handgrasp was feebler on the right than on the left. The knee-jerks and plantar reflexes were brisk, but there was no ankle clonus. Her speech was also somewhat affected. The usual tests were badly pronounced, and in attempting to repeat them she became confused. Her memory was very defective.

After-history.—She was very destructive, and pulled her bed to pieces, explaining the circumstance by saying that she was staying in a Photidian hotel, where she had been six weeks, and that she was packing up her things to go away. She knew her age, and said she had seven children, the youngest of whom died twice and was kidnapped at the age of 7, the next youngest being a son aged 23, who was staying at home. She said she was quite well, and ascribed the injury to her head as being due to a whacking given her by her husband. She also stated that she was "Mr. Whittaker the solicitor." She had no headache, or cephalic or spinal tenderness. She however complained of vertigo, and said things seemed to go round from left to right. She also volunteered the information that after these fits of giddiness she felt foolish all day. She had some tremor in her arms, which became less or even disappeared on movement. Ten days afterwards she gave another version of the accident to her head. She stated that she was confined three weeks ago, and that this is the year 1860. She thought the child was too small to live. She could recognise and name objects correctly, namely, keys, pencil, knife, and also colours. Two days afterwards she said she was 42 years of age, and that the child was 3 years old. Three days afterwards she was 45 years of age, whilst her child was 6 years. A week after this she stated the year correctly, and that she was 50 years old, whilst her son was 20. She now knew the day of the week, but could remember nothing about the cab accident. A fortnight later she gave her correct age, the age of her son, and correctly appreciated time and place. She could not recall anything of the cab accident, nor could she remember anything that had occurred during her illness.

Epileptiform Attack : Recovery—When practically well and waiting for discharge, she one day felt faint in church and was taken to her ward in an unconscious state. The pupils reacted slightly to light, were small and equal The conjunctival reflex was absent. Her eyes oscillated between the medium position and deviation to right. Sensation seemed to be lost to a pinprick in all parts except the central part of the face. When her limbs were raised from the couch there appeared to be greater flaccidity of the right arm and leg. Knee-jerks were absent. There was no rigidity anywhere. Respiration was abdominocostal. After about fifteen minutes she began to come round and sensation returned. The movements seemed equal on the right side, but no difference between the sensation on the two sides could be made out owing to her dazed condition. She was able to close her eyes when told to do so, but not to protrude her tongue. The left knee-jerk returned before the right. She was unable to answer questions rationally for some time, and her condition was very similar to that on admission. She was unable to understand or obey simple written commands, such as "shut your eyes." About half an hour later when asked her age she at first said she did not know, then answered 37. Two hours later she quite recovered and regained her knowledge of time. She could not remember anything that had happened during the attack, but she said that before she became faint she had some twitching of her right thumb and forefinger. She had also had some sensations there for two or three days previously. In the course of a few weeks she was discharged from the hospital well.

This case exemplifies a symptom well known to all asylum physicians in which, owing to traumatism, extensive periods of time are obliterated. and it is not uncommon to meet with patients of advanced age who regard themselves as juveniles, and who gradually as they improve regain the knowledge and memories associated with their real ages. So far as I am aware, however, it is not common in such cases to have on recovery complete failure to recall the events which have happened during the mental attack. I am inclined, therefore, to regard this case as falling within the category of states of double consciousness. The occurrence of the anæsthesia and its suggestion of epilepsy is also to be noted.

IV.—*Epileptiform Types.*

Dr. Rieger has reported the case of an epileptic man who for seventeen years had passed his life alternately free, or in prisons or asylums, having no memory of the abnormal states which led him to prison or asylum.

Combe instances a somewhat similar case of a female servant who was perverted and morally defective in the abnormal state, and who in the normal state had no memory of her vicious and perverted acts.

Such conditions of temporary loss of memory are found in every grade, in both the sane and the insane. The amnesic state may last for only a few minutes, or it may persist for several years. In epileptic states the most characteristic instances are to be found. Ribot regards the three forms of epilepsy—namely, *grand mal*, *petit mal*, and epileptic vertigo, as but different degrees of the same morbid state.

To account for these states of mental automatism, as they have been designated, two hypotheses have been advanced—namely: (1) That the period is not accompanied by consciousness, so that nothing can be reproduced; (2) consciousness does exist, but in so weak a form that amnesia ensues. The latter view finds most favour with psychologists, and I propose to deal with it more particularly after I have enumerated the types.

Magnan has recorded the case of an epileptic who was alcoholic. The patient, when seized during the day with an epileptic attack, broke everything within his reach, and was very violent. At night time he had alcoholic delirium, with the characteristic terrifying visions. The following day, on coming to himself, he remembered the delirium of the night, but had no recollection of the delirium of the day.

Falret has pointed out as a very important characteristic of epileptic mania, that the mental condition is surprisingly uniform in the different attacks. The recorded cases of the epileptiform type are so numerous that I refrain from quoting more.

V.—*Insane Types.*

I have already elsewhere pointed out that the instances of alternation of two personalities in the insane may, for convenience, be divided into two main groups, according as the alternation is complete or incomplete. In complete alternation the personality of the individual is entirely different in the two states; there is no continuity of thought, and the memory of one state is absent during the occurrence of the other. We have within the bounds of healthy life various analogous states, as for example, in dreams in which we forget our waking experiences and conversely. And again, as in somnambulistic and hypnotic states; and in the borderland cases of post-epileptic unconsciousness, so in the insane, we have every stage or variation in the alternation of the personality. These variations may depend upon sensory experiences which are different to those habitual to the normal self; there may be new bodily sensations, or loss of old ones, or there may be illusions of identity of part or of the whole of the individual. Of these sensory states I do not propose to speak, inasmuch as they seldom afford examples of complete alternation or double consciousness. Thus one patient in Bethlem had for several weeks alternating conditions. One day he would say, "Now then, my lads! bustle up and get me a good breakfast, I feel as if I hadn't had food for weeks." When asked if he had ever been miserable he would say, "Never known a moment's unhappiness in my life," and when questioned as to his present state of mind, he invariably replied, "I'm as fit as a fiddle, hearty as a buck, and as jolly as a sand boy." During the period of happiness he would laugh, converse with everybody, and eat ravenously. The next day, however, a change would come over him: he would lie in bed, moan incessantly, grumble at everybody, refuse food, and say that he had never in his life known a happy moment, but had always suffered the "tortures of the eternally damned." In this case the alternation was apparently incomplete inasmuch as he in both conditions recognised and called by name those who attended to his wants. I have elsewhere mentioned another case as an example of complete alternation. A female patient admitted to Bethlem some years ago used to be extremely depressed for a period of twenty-four hours, when she thought she was being burnt and failed to recognise people around her; then during the next twenty-four hours she was natural and bright mentally, recognised those around her, but had no memory of her experiences during the preceding twenty-four hours. Quite recently a case has come under my care which illustrates the inheritance of a mental instability, or a result of traumatism, or probably the effect of both.

CASE VI.—H. K., aged 6 years.

Family History.—Father subject to violent paroxysms of rage, during one of which he had an apopleptic seizure, followed by mental instability and dangerous tendencies, on account of which he was confined in an asylum.

Personal History.—At birth labour was prolonged, and the child's head was much compressed, bruised, and injured by the use of instruments. Nothing abnormal was detected in the child till it arrived at the age of 12 months, when it became subject to violent fits of temper, which increased till the age of 3 years. During the fits it would roll on the floor, scream, bite, and kick. It had, however no night terrors and no somnambulism. During the last few months the child has had several impulses to kill her younger sister, and has taken up a knife with that intention.

Condition when First Seen.—I found her to be bright and intelligent, but quite unable to give any account of the states when she wished to injure her sister. She cried bitterly at the thought of doing harm to one she loved dearly, and disowned having ever made any attempt to injure her. The child's mother told me that during the periods when she was dangerous, she had stated that although she did not wish to harm her little sister she really felt that she must do so.

This case is a very sad one, and one which I shall watch with the keenest interest; and although the details are as yet very imperfectly developed, I fear the outcome will be serious. It will be noted that there were no night terrors or somnambulistic attacks.

There are in literature so many well-known instances of alternating selves in which melancholia alternates with health, or even optimism and euphoria, that it scarcely seems necessary to refer to them here. Doubtless Azam's case of Felida is well known to all, also the numerous cases cited by Binet, Ribot, and others.

VI.—*Anæsthetic Hysterical Types.*

This type comprises those cases, chiefly hysterical, in which there is a noticable amount of anæsthesia, together with a temporary amnesia which brings them within the category of double consciousness. Pierre Janet, to whom credit is chiefly due for a comprehensive account of this type, thinks that "when a certain kind of sensation is abolished in an hysteric patient, there is also abolished along with it all recollection of past sensations of that kind. On restoring that sensation, however, its corresponding memories return. In these cases there are certain inhibitions (Janet), or what Hughlings Jackson terms "negative lesions," which prevent the recall or revival of the former sensations, thus, the occurrence of anæsthesia or akinæsthesia is apt to be attended and followed by an amnesia which forms the basis of a change in personality. When the inhibited sensibilities are restored to the hysteric by means of hypnotism the individual becomes a different person, passing into a second condition entirely unlike the normal, or, I should say, the anæsthetic hysterical condition. Janet's cases are of particular interest in illustration of how the memories and character change with the restoration of sensibilities and motor impulses. His subject Léonie particularly deserves mention. A woman who had had attacks of somnambulism since the age of 3 years, and had been hypnotised frequently from the age of 16 to 45, and during hypnosis could recall events which occurred during the somnambulism. In this case, in the first state there was visual consciousness, and the subject knew only of herself; in the second or somnambulistic state she knew herself, and the personality of the first state, and had both visual and auditory consciousness; in the third, or hypnotic state, the consciousness was at once visual, auditory, and tactile, and she knew of herself and both the others.

Bourru and Burot have given us a most careful study of multiple personality of the hysterical anæsthetic type in which there existed at various times hysteric anæsthesias, paralyses, and contractures and a series of parallel modifications of the mental state. In this case there existed precise, constant, and necessary relations between the bodily and the mental state. Undoubtedly gaps of memory often go with anæsthesias, but there is no constant relationship between the occurrences of amnesias and anæsthesias. I have seen many cases of insanity in which there have been both amnesias and anæsthesias of very extensive distribution without double consciousness. Moreover, for the marked alterations of character of the individual from dull to gay, or good to bad, we must seek some further explanation. My colleague, Dr. Stoddart, in his recent interesting paper on anæsthesias in the insane, has pointed out that in stuporose states in which there is anæsthesia, the subject will not respond to stimuli at the time, but by constantly drawing the attention of the patient to the stimulus and by the use of suggestions, that they should remember the circumstances, the subject on recovery has been able to recall not only the circumstances, but also the tactile sensations thought to have been absent at the time of the experiment. These conditions, therefore, differ from those of the hysterical anæsthetic type.

It would appear that we have yet much to learn as to what constitutes oblivion, and the possibility of recall under new sets of conditions opens a vast field of research. In the future we shall probably understand more fully the throwing of certain functional brain tracts out of gear with others and with clearer conceptions on this point we shall appreciate and perhaps even correct the defects of sensorial and ideational service which tend to alter or interrupt the continuity of self-consciousness.

VII.—*The "Mediumship" or "Possessions" Types.*

These are not uncommon, and include those cases in which during the secondary state the subjects speak, write, or act as if animated by others, living or dead. These states vary from the occurrence of automatic writing inspirational speaking, trance utterances to higher intellectual flights and theatrical scenes. The subject, when of the hysterical type, has no memory of what has transpired during the secondary state, and in the deepest degrees of trance the voice, language, and actions purport to be those of the individual represented by the medium. In one case now in Bethlem the medium regards herself as perfectly passive, and as merely carrying out the designs of the spirits which make use of her mediumship. There is as yet in this case no evidence of discontinuity of memory, and I think it probable that, as in the imperfect amnesias of stupor already referred to, should she recover she will be able to recall her present fancies and delusions. A large number of keen investigators, both in this country and America, are dealing with this subject scientifically, and doubtless some uniformity of results will be arrived at in due course.

Psychological Considerations.

Self-consciousness or the awareness of those inner states determined mainly by physical adjustments (apperceptions of Wundt) and executions is in part defective. The nuclear self consisting of the adjustments, collectively considered, is only in part evident. The adjustments and executions available approach the reflex type. The reactions are primary reactions, although apparently central and interior in comparison with the external objective factors which call them forth. It is, as James says, as if the "sanctuary within the citadel" of our personal life were but partly accessible to light.

These adjustments [or apperceptions (Wundt)] claim special significance. As Wundt has pointed out, "the images of feeling we get from our own body and the representations of our own movement distinguish themselves from all others by forming a permanent group. As there are always some muscles in a state either of tension or of activity, it follows that we never lack a sense, either dim or clear, of the position or movements of our body. This permanent sense, moreover, has this peculiarity, that we are aware of our power at any moment voluntarily to arouse any one of its ingredients. We excite the sensations of movement immediately by such impulses of the will as arouse the movements themselves; and we excite the visual and tactile feelings of our body by the voluntary movements of our organs of sense. So we come to conceive this permanent mass of feeling as immediately or remotely subject to our will, and call it the consciousness of ourself. This consciousness is, at the outset, thoroughly sensational, only gradually the second named of its characters, its subjection to our will, attain predominance."

"This consciousness, contracted down to the process of apperception, we call our *ego*; and the apperception of mental objects in general, may thus, after Leibnitz, be designated as the raising of them into our self-consciousness. Thus the natural development of self-consciousness implicitly involves the most abstract forms in which this faculty has been described in philosophy; only philosophy is fond of placing the abstract *ego* at the outset, and so reversing the process of development. Nor should we overlook the fact that the completely abstract *ego* (as pure activity), although suggested by the natural development of our consciousness, is never actually found therein. The most speculative of philosophers is incapable of disjoining his *ego* from those bodily feelings and images which form the incessant background of his awareness of himself. The notion of his *ego* as such is, like every notion, derived from sensibility, for the process of apperception itself comes to our knowledge chiefly through those feelings of tension ('adjustments') which accompany it. Each thought has an owner, and each thought, if complete, is realised in its relation to self. Failure of adjustment of the thought in relation to the complete or wideawake self results in failure of recognition by the wideawake self.*

Further, the formal unity cannot be preserved unless the transitions of the elements which go to make up self-consciousness are continuous and consequent. Dissolution of the formal unity occurs with the disjunction of the sequence through inhibition of one of the factors in that sequence. In mental disease there is apt to be first a change in the vital feelings, the sequence of fundamental inner experience is broken, and the patient feels not quite himself, complete estrangement being prevented by the processes of experience which enable him to form a bridge between the old and the new feelings. In more advanced stages the estrangement may be so great as to lead to the belief that the former self was the real self, and that the present self is unrecognisable or even dead. When the conscious memory connection is lost periodically, then we have double consciousness, and lastly, when the brain is incapable of forming or of reviving a sequence, then the final stage of mental dissolution is reached.

Psychologically, therefore, it would appear justifiable to conclude: (1) That in the abnormal states the permanent group or mass of feelings is only in part or slightly subject to the power of volition. (2) There are wanting those conscious accompaniments—or processes of apperception—which raise the apperceptions into our self-consciousness. (3) The disjoining of these bodily feelings and images which go to make up the *ego* removes the background of the awareness of self. And (4) the condition is (to use an expression of James's) one of "sciousness" pure and simple, inasmuch as it does not include those elements or adjustments which go to make up the complete self and which constitute *consciousness*.

Physiological Considerations.

The primary origin of these freaks of dual and multiple personality is so recondite that so long as psychology finds itself unable to settle upon a tangible and clear basis for memory it is doubtful whether they will ever be explained. It is true that the consciousness of identity groups itself from childhood round the cœnesthesis and the general organic sensations, but even in its earliest stages it depends rather upon reproductions and mnemonic images than upon primary sensations, and the question is how does what is often practically an almost total inhibition of the reproduction and responsiveness of the stored reflexes and modes of the past take place? Supposing the train of memory to depend upon intercellular facilities, where are those cells which can be utilised for relearning what has been learnt before without arousing what has been experienced through association? Does a man start with a new brain or with a new area which is virgin ground so far as any previous development is concerned? In some instances of extreme rapidity of re-education it has been thought possible that the memory returns, because the inhibited elements are supplanted by other elements having the same properties, primitive and acquired, as those which they replace. This may possibly account for the re-education, but it cannot account for the rapidity of the process. As I have said elsewhere, "We can readily conceive that new elements may take on the functions of old; but the re-education often means the recollection of impressions which have been conserved and reproduced. This if the case would involve restitution of the former acquisitions, revival of the old physiological dispositions, and not necessarily the opening out of new traces to displace the old."

We are all aware of Hughlings Jackson's principles—that the more highly evolved left hemisphere inhibits the right one, and that when the inhibition of the left is withdrawn the right is free to act automatically. This, however, does not offer any solution of multiple personalities, and I do not consider the hypothesis in itself sufficient.

In conclusion, I venture to submit that, until we have a more rational conception of what constitutes the physical basis of consciousness we cannot grapple with this problem. The more one considers the *pros* and *cons* of the possibility of a diffuse localisation of consciousness—by this I mean the diffusion of the elements of consciousness everywhere throughout the brain substratum—the more one is led to believe that there is no supreme centre anywhere. Each unit of the highest evolved parts of the sensorium has its own separate element of consciousness, which exhibits itself under certain physical conditions as occurring within that unit.

I regard the highest evolved centres as being a huge *congeries* of units or groups of units functionally continuous—under certain conditions of contiguity—with the periphery and with each other. These units may be compared to lamps which give light when their respective electric phenomena are in operation. Provided that the switches and transmitting agents, both peripheral and central, are functionally operative, they light up in turn in response to the stimulus be it peripheral or central. The study of seriality of thought would appear to require some physical basis on this plan, and each element of conception would require some physical counterpart correlative to the light [derived from the analogy of the lamp]. Carrying this hypothesis further, just as the switches, couplings, or currents may under one series of conditions become functionally inert at one time, leading to inability to produce light in one or several sets of lamps, so under another series of conditions may the same switches, couplings, or currents again become functionally active and determine the existence of light.

The psychical elements correlative to a series of central lights constitute conception and seriality of thought, and the inertness of any of the physical correlatives of this seriality would result in a loss of some of the elements which go to make up consciousness and consciousness of self. Since the hypothesis of the neurospongium with the movements of its amœboid protoplasmic prolongations has been enunciated by Rückardt and elaborated by Lépine, Golgi, Ramon y Cajal, Duval, and confirmed by Lugaro, I have been anxious to accept it.

It will simplify the hypothesis considerably if the ramifications (or pseudopods) of the nerve cells do elongate and retract under varying influences thereby favouring or breaking the contiguity of neighbouring neurons, and so rendering it possible or impossible for currents to pass. In any case it seems justifiable to assume that the amnesic defects which go so far to constitute what we call double consciousness are due to failure under one set of conditions to switch on the lamps which were lighted under another set of conditions, and which may again be lighted under that other set. This hypothesis would appear to demonstrate how it is that there may be no end to the number of personalities in one individual.—*Brit. Med. Jour.*, Sept. 23, 1899.

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PATHOGENESIS OF IODINE.

By Dr. P. Jousset.

(Translated from *L' Art Medical*, October 1899.)

According as the dose administered is strong, medium, or weak, Iodine produces three forms of poisoning—acute, subacute, or chronic.

We will describe in this article only the chronic form, reserving the treatment of the more acute forms after we shall have finished the experiments that are being carried on in our laboratory; experiments which are designed to fill up the void in the history of the symptoms and lesions of poisoning by Iodine.

Iodism or Chronic Poisoning by Iodine.

The history of the action of Iodine in small and long continued doses on the human organism presents a great difficulty, namely, that most of the symptoms are taken from *patients* under treatment, whether for scrofula or more especially for goitre. Now the symptoms produced by small doses of Iodine upon the healthy organism have such a resemblance to symptoms due to the suppression of the function of the thyroid gland, whether by alteration in its structure as in exophthalmic goitre, or by its excision, that several physicians have agreed to explain by this cause the symptoms attributed to Iodine in small and long continued doses.

We shall see a little further on that it was by this argument that the *Academie de Médicine* pretended to refute the work of Rilliet on Iodism, presented in 1859. And although Rilliet had taken the precaution (very genevese) to remark that the doses he had employed were ponderable, the immortals of the Academie, persuaded that the smaller doses were still the first Hahnemannian triturations, smelt the homœopathic heresy to such a degree that they did not hesitate to condemn Rilliet's work as disfigured by error of diagnosis. We challenge this judgment and we shall demonstrate its falseness.

Coindé,* after having inaugurated at Geneva the treatment of goitre by Iodide of Potassium, discovered that this treatment gave rise to grave accidents in a number of cases, especially when the goitre disappeared rapidly. He then progressively diminished the doses. Charles Coindé, his son, accentuated more and more this diminution of the doses, and Marc d' Espines, Mouvert, and Bizot, who, in 1834, took the direction of the medical dispensary of Geneva, fixed the dose of Iodide of Potassium in the treatment of goitre at a hundredth (0.0005 decimilligrammes) of a grain per day (*Memoires sur l'iodisme*, p. 9.)

Rilliet observed that these very small doses of Iodine developed in man an assemblage of symptoms very different from acute iodism and which had not yet been described.

Charles Coindé, whose experience of iodine medication, is so considerable, professes the same opinion. Rilliet accordingly decided to write his memoir and he based it upon three categories of observations. We have put aside the first category, because it is based upon goitrous patients, because it may be met with among those with exophthalmic goitre, because in veritable goitrous patients the total disappearance of the thyroid gland may have sequelæ analogous to those of its ablation, because moreover the goitrous do not represent healthy organisms. For all these reasons we leave out the first category of facts brought together by Rilliet. By contrast the second category of observations constitute a *pure experiment* like those instituted by Hahnemann for the study of the materia medica. 28 persons, of whom one only was phthisical, and none, either before or after, presented any symptoms of goitre. These 28 persons, during two years, used, in the preparation of their food, kitchen salt to which was added ten thousandth part of iodide of potassium, so that the quantity of iodine absorbed by each person in two years was 40 centigrammes. Out of these 28 persons, 3 became sick, one male of 45 years and two females of 60 years.

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* We generally find this name spelt as Coindet.—Editor, *Cal. J. Med.*

Here are the observations :

Obs. I.—Man of 45 years, of a very strong constitution, never sick. At the end of seven months' use of the iodide, this man began to grow thinner. He experienced palpitations, his mental faculties were affected, there were sadness, melancholy, fixed ideas, despondency, and indefinable malaise in the lower abdomen with constipation.

The use of the iodide salt was suspended accidentally during the months of January and February and the re-establishment of health was complete.

In the month of August this gentleman resumed the use of the iodide, and very rapidly, scarcely at the end of two months, he had a return of the symptoms previously described with much more intensity than at the first time: emaciation remarkable and progressive notwithstanding voracious appetite; as at the first time tremblings, palpitations, staring look, yellow skin, and above all moral symptoms very pronounced, weeping mood, irritability, disgust and despondency, disturbed sleep. This time there was no hesitation to attribute all these symptoms to the iodide as the cause. It was discontinued, and the patient recovered completely at the end of two months.

Here is a fact which has excited the criticism of the academicians. This same man, two years and a half after his complete recovery from his second accession of iodism, got back the same symptoms, but with an intensity which caused him to fear of his life, and all this for having passed 21 days on the sea-shore at Biarritz and at Arcachon. Emaciation skeleton-like with exaggerated hunger, decay as in old age. He walked bent double, there were tremblings, breathlessness from the least movement, pulse feeble and very frequent, loss of energy so much as to compel him to keep to his bed and to render the voyage to Geneva difficult. Arrived in this town he recovered promptly and completely.

Obs. II.—Female of 60 years. The accidents that began after two months' use of the iodine salt were: Emaciation with great appetite, tremblings, palpitations, face pale and yellow, loss of energy, insomnia, exaltation of the emotions, fixed ideas, sadness. Health was restored very promptly after the cessation of the salt.

Obs. III.—Female of 60 years. Used the salt for 4 months, had the same symptoms. Was cured by the stoppage of the salt.

We have said that the experiments of Rilliet were conducted in the same way as those of Hahnemann. Experimentation with ponderable but very feeble doses of the medicine, 20 centigrammes in the course of a year, experiment continued for a long time, health ot the subjects under experimentation perfect, symptoms almost identical among all the subjects affected, a small proportion of those experimented on were affected by these infinitesimal doses, 3 out of 26. We therefore retain these experiments of Rilliet and consider them as having characters which are required to constitute an experimental materia medica.

We find in the materia medica of Hahnemann the confirmation of all the symptoms produced by small doses of the iodine in healthy men. Thus, disposition to melancholy (symptom no 2), anxiety (10), agitation (17), repugnance to work and despondency (20, 21, 25), irritability (27, 28), extreme excitation of the nervous system (30, 33, 34), fixed ideas (37), face pale and yellow (128, 130), alteration of the features (133), voracity and bulimy (201, 203, 204, 205), pain in lower belly (261, 265, 268 271, &c.) obstinate constipation (300, 301, &c.), oppressed respiration (450, 453, 455), strong palpitations of the heart (471, 472, 474, 475), general trembling with small and very accelerated pulse (610), lassitude (623, 624), complete prostration (631), emaciation to the point of marasmus (650, 653), disturbed sleep (669), complete insomnia (671), pulse accelerated (693) and extremely small (698).*

The symptoms observed by Rilliet in the patients experimented upon have been already observed and recorded in the *Chronic Diseases* of Hahnemann. If I add that a great number of authors, such as Gardner, Richter, Perrot, Collet, Groele, Walle, Massalien, Neuman, Hefling, Goery, Schmiett, Orfila, Coindé, Rust, Baup,

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* These numbers do not always agree with those of the new translation of the *Chronic Diseases* by Tafel.—Editor, *Cal. J. Med.*

Matthey, &c., &c., have reported as produced by iodine the same symptoms that we have described, we may consider these symptoms as veritably produced by the continued administration of Iodine in small doses.

We proceed to give a résumé in a few lines the symptoms produced by Iodine, preserving as much as possible the evolution of the medicinal disease.

Iodism is generally announced by exaggeration of the appetite, bulimy, accompanied with painful heat in the epigastric region and a feeling of exhaustion which disappears after taking food. Soon emaciation becomes pronounced with alteration of the features, pallor of the countenance and staring character of the eyes.

If the use of Iodine is continued, the symptoms become progressively worse, generally slowly, some times with frightful rapidity. The emaciation becomes accentuated from day to day, notwithstanding an exaggerated appetite, the pulse is accelerated especially from the slightest movement, is small and feeble. The skin of the face is pale and yellow, the facial expression is indicative of sadness and anxiety, the eyes have a dark circle around them, now fixed now wild, the postration is great, the voice is broken, the patients tremble and are breathless from the least movement, nervous symptoms painful and troublesome, inquietude, fright, great irritability, easily moved to tears.

The action of small doses of Iodine upon the organism incidentally raises four questions: that of the age in which the susceptibity to iodism is the greatest, that of the country in which it is observed most frequently, that of the absolutely different action of large and small doses, and lastly that of the incontestible susceptibility of the goitrous to the action of Iodine.

Age.—Rilliet has expressly said that chronic iodism is but scarcely observed except in adults and old people, and that he has always prescribed without inconvenience to infants and adolescents small doses of Iodine for the cure of goitre. We have not as yet any explanation of the influence of age on iodic receptivity.

Country.—The physicians of Geneva have remarked that constitutional iodism is almost exclusively observed in the countries and in the centre of Europe. The explication of this phenomenon is sufficiently natural. The air and the waters of Switzerland, according to the researches of Chatin, do not contain Iodine. This medicine finds therefore in these people an organism absolutely virgin (as regards Iodine) whilst the populations whose air contains notable quantities of Iodine, as the inhabitants of the sea-coast, enjoy a certain relative habituation to this metalloid.

The opposite action of large and small doses.—Strong doses of Iodide of Potassium, from 1½ to 3 grammes daily, continued *without interruption,* for months, in the treatment of syphilis or scrofula, have never produced a single case of iodism, whether the patients are inhabitants of Geneva or of Paris.

On the contrary, very feeble doses of Iodide of Potassium (2 milligrammes to 1 centigramme per day. Observation I to VI of Rilliet) produce very grave symptoms of iodism and these symptoms may begin after 5 to 10 days of treatment (Rilliet). Thus, it is incontestible, on the one hand, that enormous doses continued for months without interruption, do not produce any constitutional symptoms of iodism, while on the other hand the smallest doses expressed in milligrammes determine in a few days grave symptoms which, notwithstanding the cessation of treatment, continue for several months. And it is necessary to explain this action apparently paradoxical by the state of health of the patients, the existence, for example, of goitre, in this last category, since the same effects of iodism by equally infinitesimal doses have been produced in persons of full health (2nd Category of observations of Rilliet).

The opposite action of strong and feeble doses is an ordinary law of pharmacodynamics. It is unnecessary to cite the instance of Tartar Emetic administered in the dose of 0.05 centig. or of 1 gramme, of Opium in a dose so to say physiological and exciting and in a strong and toxicological dose, of purgatives which, in ordinary doses bring on evacuations from the bowels, in small doses bring on constipation. The attentive study of the materia medica shows that in all medicines there are opposite actions according as the dose administered is small or large. The Iodide of Potassium follows the general law, and the researches, which I have not been able to complete, tend to prove that goitre treated by doses larger than used by Rilliet produce less often the accidents of iodism. This appears to be the result of a perusal of the memoir of Coindé.

Receptivity of the goitrous for Iodine.—If iodism may be developed in persons of full health and absolutely free from goitre, it is true to say that the goitrous present a susceptibility in every way peculiar. How to explain this susceptibility? The first point to know well is the succession of symptoms in goitrous patients attacked with iodism during treatment. In order to this, we give a summary of some observations of Rilliet which are really suggestive.

Obs. I.—Case of a man of 50 years, of habitual good health, carrying since youth a goitre situated on the right side of the neck. This goitre is round, lobulated, indolent, non-fluctuating, of the size of an orange. Its growth has been slow and insensible.

This patient took every morning fasting a spoonful containing one gramme of Iodide of Potassium. On the first day of treatment, indefinable great distress. On the sixth day the uneasiness increased and the emaciation became considerable, the patient threw up his potion of milk.

Two days after, the physician established in this patient the signs that we have described of the most grave iodism. But the goitre became reduced to three-fourths of its volume. The patient was sent to the country, suffered the whole of summer, recovered completely in the winter, but the goitre came back to its original size.

Obs. II.—The case of a female of 36 years. Goitre since the age of 30 years. External treatment with frictions of Eau de Cologue, containing 1 gr. 30 of the iodide to 30 grammes of the water

At the end of six days the goitre was considerably reduced, but all the symptoms of iodism were developed at the same time. The health was re-established at the end of two months, but the goitre re-appeared.

Obs. III.—Case of a dog attacked with goitre. It took 2 centigrammes of Iodide of Potassium in four days and presented the principal symptoms of iodism. He recovered, and his goitre has not reappeared.

Obs. IV.—Case of a man of 52 years, carrying a very large goitre. Iodism grave, after having consumed 12 and ½ centigrammes of Iodine in 60 days. Cure, with re-appearance of the goitre.

Observation V. is a repetition of the others, 60 centigrammes of the Iodide in 4 months. Iodism moderate. Cure with reappearance of the goitre.

It results from a perusal of these observations that the appearance of iodism in the goitrous is accompanied by the disappearance of this tumor, and that the cure coincides with the reappearance of the goitre. It would appear that the action of Iodine upon the thyroid gland is comparable to the action of thyroidectomy. In the two cases, the physiological action of the thyroid gland is suspended, and the symptoms so analogous to those of myxœdema are met with in both.

From the facts so precious, shut up in the memoir of Rilliet, facts which confirm the pathogenesis of Hahnemann, it follows that we possess a pathogenetic history of Iodine which may have its legitimate place in the experimental Materia Medica.

[It is remarkable that among the symptoms of iodism given above are not included the violent vomiting and purging with fever and thirst and cramps and dry cough, observed by Coindet, Gardner, and others; nor the very striking absorption of the mammæ and wasting of the testicles. "Of the first of these (absorption of the mammæ)," says Pereira, "three cases are reported in *Hufeland's Journal*, one of which may be here mentioned. A healthy girl, twenty years of age, took the tincture of iodine during the period of six months for a bronchocele, of which she became cured; but the breasts were observed to diminish in size, and, notwithstanding she ceased to take the remedy, the wasting continued, so that at the end of two years not a vestige of the mammæ remained. Sometimes the breasts waste, though the bronchocele is undiminished. Richenau relates the case of a female, aged twenty-six, whose breasts began to sink after she had employed Iodine for four months, and within four weeks they almost wholly disappeared; yet her goitre remained unaffected." With regard to the other effect (wasting of the testicle), Pereira suspects it to be very rare. In a young man who took moderate doses of Iodine for obstinate gonorrhœa, Cullerier (Mem. de la Soc. de Chir. de Paris) observed that the testes diminished in size and consistency leading to extinction of the sexual power.—EDITOR, *Cal. J. Med.*].

WHAT IS THE TRUE HOMŒOPATHIC FORMULA, SIMILIA SIMILIBUS CUR*A*NTUR OR CUR*E*NTUR?

It may appear strange that such a question should be asked a century after the establishment of homœopathy. But strange as it may seem, the question has to be asked, because it has become a serious one. For, almost suddenly, the question has divided the homœopathic branch of the profession into two contending and almost hostile camps. This difference, which appears to us to be stupid and almost insane, has afforded merriment to our friends the enemy.

The *British Medical Journal* for Sept. 9, commenting on a silly correspondence which appeared in the *Homœopathic World* for July, indulges in the following banter under an article "What is Homœopathy?"—"What is the law of similars? The true fold itself appears to be divided on this fundamental point. In the same issue of the *Homœopathic World*, Dr. R. E. Dudgeon (the only man among the sectaries of whom we feel disposed to say *Talis cum sis utinam noster esses*) shows that the great dogma *Similia similibus curantur* is a perversion of the word of Hahnemann, who wrote *Similia similibus curentur*. The prophet of homœopathy did not, it would appear, teach that likes are cured by likes, but that likes should be treated by likes, the Latin verb *curare* meaning not to 'cure', but to care for, that is, to treat—a very different thing, as even the most malignant 'allopath' would allow."

In order to return a proper answer to the question which heads this article we ought to be able to answer the following questions: Which of the two formulæ Hahnemann used? What is the difference between them? Is the difference fundamental?

It is an undoubted fact that Hahnemann used the formula *similia similibus curentur* only, and that the only published work of his in which he used it is the *Organon*, and he used it in all the five editions. Besides this he used it in his letter to the Minister of Public Instruction of France, dated "Coethen, Duchy of Anhalt, 13th February, 1835." We do not find him using the expression anywhere else, at least, not the expression in full. Thus, in his "Essay on a New Principle for Ascertaining the Curative Powers of Drugs," published in *Hufeland's Journal*, in 1796, and translated by Dr. Dudgeon (*Lesser Writings*, p. 31 he says: "*We should imitate nature*, which sometimes cures chronic disease by superadding another, and *employ in the* (espe cially chronic) *disease we wish to cure, that medicine which is abl to produce another very similar artificial disease*, and the forme will be cured; *similia similibus*." Here the verb is omitted. I would have been interesting if we could know what Hahneman wished these words *similia similibus* to imply. Had they re ference to the word *cured* immediately preceding, or to the wor *employ* in the middle of the sentence? We should think th former as the more likely, as then the meaning would be mor obvious, the concluding sentence being,—"and the former will b cured; likes by likes." And Hahnemann would thus seem t have an eye upon the law of healing.

How the other formula *Similia similibus curantur* came not only to be used, but used most extensively and almost exclusively no body can positively say. Dr. J. H. McClelland, of Pittsburg, Pa., in a paper on the subject, read before the American Institute of Homœopathy in June and which has been published in the October number of the *North American Journal of Homœopathy*, writes—"If our information is correct, it is the *British Journal of Homœopathy* that made the change to the indicative form, which it did without authority, and, as the story goes, much to the indignation of Hahnemann himself. It is said he exclaimed: 'Do they think I do not know what I wish to say?' or words to that effect." Dr. McClelland further says: "In answer to some inquiries made by myself, Dr. Dudgeon writes: 'I have no knowledge of the reason for the alteration of Hahnemann's S.S. Curentur, into Curantur. The Rev. T. Everest, a great and intimate friend of Hahnemann's, used to say that Hahnemann was very much annoyed that his adherents would give his formula as Curantur, and imply that it meant 'Likes cure Likes', when he meant it to be a therapeutic rule 'Let likes be treated by Likes'." We have only to say to the above that if the *British Journal of Homœopathy* was really responsible for the change, Dr. Dudgeon, for a long time one of its editors, should have known it; and that if Hahnemann was really indignant and annoyed at the unwarranted change, it is strange that he publicly did nothing to correct it.

In his new translation of the *Organon* Dr. Dudgeon makes the following remarks with reference to this point: "The Latin formula employed by Hahnemann is frequently written erroneously *similia similibus curantur*, and as erroneously translated 'likes cure likes.' Hahnemann was too good a Latin scholar to use the verb 'curare' in the sense of 'to cure'; besides, he always wrote the formula *similia similibus curentur*, thereby giving an imperative or mandatory turn to the phrase. The translation must evidently be 'let likes be treated by likes.' This is evident from the translation or paraphrase he gives in every edition, showing it to be a therapeutic maxim or rule. In the first edition he calls the phrase: 'guide to the true law of healing' (*Anleitung Zumächten Heilweg*). In the second, third, and fourth editions it is the 'maxim' (*Satz*). In the three first editions the latin formula comes in after the German paraphrase. In the fourth edition the Latin precedes its vernacular paraphrase. In the fifth edition a different arrangement is adopted. The Latin formula is no longer in conjunction with its paraphrase, but occurs in the preceding paragraph, and is there termed 'the only therapeutic law conformable to nature' (*Das einzig naturgemässe Heilgesetz*). The German paraphrase is still, however, *Satz*. By the dislocation of the Latin from its German equivalent, and by its being no longer termed *Satz*, *i. e.*, 'maxim,' but *Heilgesetz*, literally 'law of healing,' it would seem as though Hahnemann was inclined to adopt the idea conveyed in the innovation of '*curantur*' with its incorrect rendering by the phrase 'likes cure likes.' In the aphoristic portion of the work, however, he teaches that the homœopathic therapeutic rule is the outcome or corollary of the law of nature that *a weaker affection is extinguished by a stronger similar one* (§24-26). From this the therapeutic rule 'treat likes by likes' is an obvious logical deduction.'"

In his letter to the Minister of Public Instruction of France there occurs the following paragraph: "All the systems of medicine hitherto invented, regard diseases as capable of being *displaced* materially by violent means, which weaken the vital force with blood-letting and evacuations of all sorts. Homœopathy, on the contrary, acting dynamically on the vital spirits, destroys diseases in a gentle, imperceptible, and durable manner. Hence it is not merely an ingenious invention, a skilful combination that produces results more or less beneficial in it application, but it is a principle of eternal nature, the onl one able to restore to man his lost health. The science established on this principle, which is expressed in the sentenc *similia similibus curentur*, is, and will continue to be in opposition to all medical doctrines, and to those who practise them; consequently M. le Ministre, you cannot accept for its judge those who are unacquainted with it, or who are directly interested in opposing its progress." Here again, then, Hahneman points to the phrase similia similibus *curentur* as expressing "a principle of eternal nature," which is but another name for a law of nature.

We are assured by a scholar of Dr. Dudgeon's eminence that Hahnemann was too good a Latin scholar to use the verb "curare" in the sense of "to cure." And he says "that if Hahnemann meant to say 'likes are cured by likes' he would have written *Similia similibus sanantur*. The complete formula might run *similia similibus curentur quia similia similibus Sanantur*— 'let likes be treated by likes because likes are cured by likes'." Dr. McClelland, in the paper above mentioned, closely follows Dr. Dudgeon. "Curantur, as we know," he says, "is the present indicative passive, and Curentur the present subjunctive passive, of the verb Curo. Now, the correct idea of the verb is not properly or classically expressed by the word Curo. The word best expressing the idea of cure is Sanantur, and Hahnemann, with his full knowledge of the classics, very well understood this. The more direct meaning of the root Curo, is to treat, to take care of. He wished to indicate a method of treating disease, a rule of practice. Hence he used the subjunctive form of the verb and enunciated the formula now famous for all time, *viz.*, Similia Similibus Curentur. He intimated that in the healing of the sick this is a correct rule of practice. He did not mean to say 'likes cure likes,' a bald statement of fact. The subjunctive terminology, therefore, which he himself employed must be correct, and should be adopted by all who follow his method." Partisanship could not go further. "Likes cure likes" is a bold statement of fact! Is it therefore worth nothing? All enunciations of nature's laws are bald statements of facts. But are they less fruitful on that account? Do they not suggest rules of practice?

But though no Latin scholar, we may ask without irreverence, has not the verb *curo*, from which the verb *curare* is derived, one of its derivative meanings *to cure* in the medical sense? If we mistake not, Dr. Smith quotes Cicero as an authority for it. If so, Similia Similibus Curantur was not such atrociously bad Latin as to excite Hahnemann's indignation and to cause him to feel annoyed at the change. When we have positive evidence both in the fifth edition of the *Organon* and in his letter to the Minister of Public Instruction of France that Hahnemann had in view the law of healing as a principle or law of eternal nature which he thought he had discovered and which he said to the minister was expressed in the sentence Similia Similibus Curentur, we are inclined to think that he rather acquiesced in the change and thought it unnecessary to interfere, as the two expressions conveyed the same meaning, his own by inference and the changed one directly. We shall continue to hold this opinion, until positive evidence to the contrary is forthcoming. Mere surmise or hearsay can have no weight in the determination of the question.

We are, therefore, constrained to say that the quarrel about the phrases similia similibus curentur and similia similibus curantur has been a most unseemly one in our school. We should not have been sorry at all if it had not led to most unfortunate consequences. The partisans of the latter phrase, in absolute ignorance of the fact that it was the former phrase which was used by Hahnemann, have gone the length of "boldly asserting that it (the phrase with curantur) was changed by an unscrupulous or careless transcriber!" The change was not from curantur into curentur, but the very reverse. Whoever did it first could not have read Hahnemann's *Organon* in any of its editions in the original, and must have done it under the idea that the curantur, being in the present indicative, really expresses the law of healing. We must be charitable enough to believe that he was acquainted with the derivative medical meaning of the verb Curo. This was enough for him to be satisfied with the phrase similia similibus curantur. Once in use the phrase held on till actual readers of the *Organon* and critical Latin scholars discovered what was the phrase used by Hahnemann and what the difference of meaning between the two.

We are agreed as to the rule for the selection of remedies which must be based upon the law of healing by drugs which we all acknowledge. The rule is expresed by the formula, similia similibus curentur, which was adopted by Hahnemann. The law is expressed, not inaccurately, by the formula, similia similibus curantur, and certain it is we have had no public protest against it from him. What is the ground then for the wrangle as to which should have the preference? Each has its own signification and its own significance. There is no fundamental difference, certainly no antagonism, between the two. On the contrary, one is, we may say, to use Dr. Dudgeon's words, "an obvious logical deduction" from the other. Instead, therefore, of pertinaciously sticking to the one or the other, and thus furnishing an excuse to the old school to trumpet forth to the world that we are fundamentally divided (when in reality we are not) as to the principle of drug selection, why not hold on to both, the one as expressive of the law of healing which was Hahnemann's merit to develope if not to discover, and the other as the rule of practice, or, as he himself called, "the guide to the true way of healing," in the first edition of the *Organon*, and "maxim," in the subsequent editions, based, as it must be, upon the law?

Dr. McClelland exhorts us, "in the interests of historic accuracy and correct scholarship" to "return to Hahnemann's original declaration Similia Similibus Curentur." The American Institute of Homœopathy, at its last annual meeting, has authoritatively declared that this should be so. We look upon this decision as unfortunate. We think we have disposed of the argument from "correct scholarship." As regards "historic accuracy," the argument is cogent so far as Hahnemann is concerned. But scholars have yet to discover what was the formula before Hahnemann. As there were presentiments, and strong ones, of the law of similars before Hahnemann, so there was, in all probability, some abbreviated expression enunciative of the law, and unless this can be found out we cannot look upon the "historic accuracy" argument as final and conclusive.

REVIEW.

The Logic of Figures or Comparative Results of Homœopathic and Other Treatments. Edited by Thomas Lindsley Bradford, M.D. Boericke & Tafel, Philadelphia, 1900.

This book, though dated on the Title Page 1900, we received from the publishers in November last, and we therefore lose no time in noticing it in the present number as it is a book which ought to be in the hands of every one who wants to be convinced of the immense superiority of Homœopathy in the treatment of all diseases, especially of the most formidable ones that afflict humanity.

The author tells us in the Preface that he has for convenience divided the work into the following sections:

"General Statistics—Death rates in the principal allopathic and homœopathic hospitals in Europe and America; results of hospital experiments to test the value of Homœopathy as a medical system. Statistics of cholera, yellow fever, pneumonia, typhus fever. Statistics of treatment of children in homes under each school of medicine. Statistics of asylums of the insane. A bibliography of statistical books and articles is given."

Strangely enough, as will be seen from a glance at the book, the author has omitted to mention in the list of contents Section VI which contains the statistics of Diphtheria.

The general statistics, giving the comparative results of treatment allopathic and homœopathic in the United States, are very valuable, inasmuch as they show "that in all diseases the allopaths sign death certificates greatly in excess of their proportion on any basis of calculation; in fact, that they sign practically two death certificates to our one on any basis of comparison. It lies with them to say why this is true." "When the people," says the author, "realize what these facts mean to them individually they will know whom to consult in sickness. Then will medical students know what school cures the sick." We wish with him "God speed the day!"

We have space only to give some idea of the statistics of two special classes of disease, Cholera and Insanity.

As regards Cholera it is notorious that "in no other disease than in this terrible scourge is homœopathy found to be more successful." Dr. Bradford quotes the following from the book on "Austria, its Literary, Scientific and Medical Institutions" by Dr. Wilde, "an allopathic surgeon, and the talented editor of the *Dublin Quarterly Journal of Medicine*:" "Upon comparing the report made of the treatment of cholera in the Homœopathic Hospital at Vienna with that of the other hospitals at the same time, it appeared that while two-thirds treated homœopathically were *cured*, two-thirds of those treated by the other hospitals *died*. This extraordinary result led Count

Kolowrat, Minister of the Interior, to repeal the law interdicting the Practice of Homœopathy."

So uniformly successful has been the result of the homœopathic compared with the allopathic treatment of cholera throughout the whole world, and so convincing has been the argument therefrom in favour of homœopathy that the returns of the Homœopathic Hospital in London regarding the treatment of the disease in a late cholera epidemic in England "were deliberately and designedly suppressed, because they showed that by that treatment two-thirds were cured; while according to the aggregate statistics of the other hospitals, two-thirds died," notwithstanding that the accuracy of the report was verified and vouched for by the allopathic inspector. And when an explanation was called for the plea for the suppression was not that the statistics were false but that they gave countenance to a system of quackery!

As regards Insanity statistics could only be obtained from the United States, as it is there alone that there are State asylums where the insane receive systematic homœopathic treatment. The statistics collected by Dr. Bradford are very valuable, showing the immense superiority of the new over the old school. This is proved beyond the shadow of a doubt by the following table showing the comparative results at Middletown State Homœopathic Asylum for the insane, with allopathic institutions :

Middletown (Homœopathic),	125
Buffalo (Old School),	108
Utica, "	87
Hudson River (Old School),	85
St. Lawrence, "	77
Willard, "	31
Binghamton, "	26
Rochester, "	[illegible]
Total number treated at Middletown State Homœopathic Hospital.	1,104
Recovered,	[illegible]
Total number treated at all State Hospitals	[illegible]
Recovered	[illegible]
Number of recoveries per thousand under treatment :	
At Middletown, (Homœopathic)	[illegible]
At all other Hospitals, (Allopathic)	[illegible]

As the author himself says in the Preface the work is not an entirely exhaustive one, yet we are glad to see that in [illegible] pages of small octavo he has condensed a mass of statistical information which is exceedingly useful and interesting. We have no doubt a second edition will soon be called for, and then, we are confident, with his usual industry and extensive acquaintance with the literature of both the schools he will make such additions and supply omissions of dates as will render the work a really exhaustive one. The get up of the book is in Messrs. Boericke & Tafel's usual style of excellence.

EDITOR'S NOTES.

Pains due to Ovarian Calculus.

Coe (*Amer. Gynec. and Obstet. Journ.*, August, 1899) writes of a patient, aged 41, recently married for the second time, and childless. She had suffered from an attack of peritonitis nearly a year before operation, and a second six months after the first. The first attack was diagnosed as appendicitis; the patient suffered from more or less constant pain in the hypogastrium, chiefly to the left. The most marked symptom, however, was intractable sciatica on the left side. A calculous concretion was found in the ovary, which was removed and exhibited by Coe before the New York Obstetrical Society. It is not stated in the report whether the ovary was inflamed or cystic.—*Brit. Med. Journ.*, November 25, 1899.

Dr. T. F. Allen on Opium.

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It is interesting to note, in connection with *Aconite*, that *Opium*, not far removed, botanically, from the *Ranunculaceæ* (the natural order of plants, which comprises the "*Aconites*") shows a definite, though unexpected, therapeutic relationship to *Aconite*. *Opium* is frequently called for in a high grade of fever, viz., a high temperature without the development of a distinct inflammatory process. It seems like a "*prodromal fever*," similar to that calling for *Aconite*. The fever of *Opium* is, however, characterized by intense thirst and great sleepiness, but with no anguish nor fear and no restlessness. The fever of *Opium* is sometimes associated with distinctly periodic reccurences, and so is sometimes applicable to a fever of a remittent or intermittent type.—*Homœopathic Recorder*, Nov., 1899.

Inoculation against the Plague.

Galeotti (*Lo Sperim.*, An 53, f. 3) believes the only treatment of any value in plague either as preventive (and chiefly that) or as curative is inoculation. He thinks the method proposed by Professor Lustig and himself (that is, the use of a nucleoproteid extract of plague bacilli) is superior to Haffkine's, because in the first place the substance is purer and freer from admixture with other toxic substances which produce an intense reaction, hurtful to the organisms and useless *quâ* immunity. Haffkine's fluid has a very low toxic and immunising power easily changed by heating, which is not the case with the nucleoproteid. Moreover the latter can be easily preserved in the dry state and can be accurately dosed. A few experiments have been tried on man with the nucleoproteid, and it has been found perfectly innocuous in proper doses.—*Brit. Med. Journ.*, December 9, 1899.

Wireless Telegraphy between Balloons.

Experiments are being made at Vienna on the possibility of communication between balloons by wireless telegraphy, and they have met with some success. A captive balloon takes the place of the tall mast as used in the Marconi system. A copper wire is stretched between it and the earth, where the transmitting apparatus is placed. The second balloon, which ascends freely, carries the receiving instrument and is furnished with a wire 60 feet long hanging downward from the basket. The balloons received and transmitted messages up to a distance of six miles and at an elevation of about a mile. Of course, the great difficulty will be to establish a transmitting station in a free balloon, both on account of the weight of the necessary apparatus and also because there is danger of discharges from the powerful condenser so near the inflammable gas of the balloon. Future experiments will be looked for with interest by all who are engaged in making a study of wireless telegraphy.—*Scientific American*, Nov. 25, 1899.

Family Goitre.

At a meeting of the Berlin Medical Society on October 18th, Holländer exhibited a mother and four daughters, all sufferers from the diffuse hyperplasic form of goître, without any affection of the central nervous system. The mother's affection dated from her twelfth year, when she was living in Mecklenburg, a locality where there is no goître; it may have been due to carrying heavy weights. She has for many years lived in Berlin, has six daughters and one son; all the daughters were attacked three or four years before menstruating with goître in the same way; were rather anæmic and nervous, but otherwise healthy. Spontaneous cure took place as regards mother and two daughters; and the tumour has begun to diminish in a third under the use of iodide of potash ointment, to the curative effect of which Holländer attached importance. He had tried preparations of thyroid for a month without benefit in the only case that he had treated, and abandoned it as symptoms of thyroidism came on. Ewald had found thyroid preparations very beneficial, and that when arsenic was given at the same time there was no thyroidism.—*Brit. Med. Journ.*, Dec. 2, 1899.

Permanganate of Potassium as an Antidote.

The powerful oxidizing properties of permanganate of potassium have rendered it valuable as an antiseptic and disinfectant, but its properties as an antidote for various poisons are not so generally known. It has been prescribed with success by Bokai and other physicians in the case of phosphorus, which it transforms into orthophosphoric acid. It has been used by Autail for oxalic and hydrocyanic acids and their salts as well as for strychnine and other vegetable alkaloids. Pyle Koemer has employed it in the case of poisoning by opium, and Lacerda for serpent bites and those of venomous insects, spiders, etc. Several years ago the physician Hugoneng showed its action against atropine, aconitine, caffeine, cocainine, etc. In a recent work, an Italian physician, Paratore, has remarked its effect upon the vegetable alkaloids such as nicotine and aconitine and also upon the vegetable poison curare. He has studied its action in cases of poisoning by strychnine, comparing it with the usual antidotes such as tannin and iodine. As a result of his researches he finds that the permanganate is superior to the others, whether employed in direct injection or in cleansing of the stomach.—*Scientific American*, Dec. 2, 1899.

Dr. T. F. Allen on Gelsemium.

The fever which calls for *Gelsmium* is clearly without *thirst:* in this respect quite different from that demanding *Aconite* or *Opium*. The following observation may serve to illustrate the applicability of *Gelsemium:* A lady suffered from fever recurring daily about two in the afternoon, temperature 103 or above, with vertigo, a decided dullness in the head, mostly behind the ears, loss of control of coördinated movements, inability to walk steadily, an increasing difficulty to think clearly, etc. There was entire lack of thirst, no nausea, no perspiration. After a few hours the febrile stage gradually disappeared, the patient became cool and was simply lethargic till the next day. The immediate cause of the fever seemed to be *recurring, malignant sarcoma* which had twice been most skillfully removed with an immense amount of tissue, with lymphatics which, apparently, had been involved, bnt the malignant growth had returned on the forearm and had produced enlarged glands and inflammatory symptoms in the arm when the increasing fever and alarming brain symptoms demanded attention. *Gelsemium* speedily, in a few days, dissipated the fever, caused a rapid disappearance of the malignant growth which simply *dried up and vanished* and the patient fully and completely recovered her health.—*Homœopathic Recorder*, November, 1899.

New Method of Detecting Gold.

A new method of detecting the presence of a small quantity of gold has been recently discovered by Dr. Ohler. By this method the presence of quantities as low as 77 centigrammes per ton may be established. The operation is as follows: A quantity of finely powdered ore, say 120 grammes, is introduced into a flask. To this an equal volume of tincture of iodine is added, and the mixture well agitated. It is then left for an hour, agitating from time to time, and is finally allowed to stand. When the solution has separated, a band of filter paper is saturated with this, and the paper allowed to dry. This operation is repeated five or six times in succession, in order to completely saturate the paper. It is afterwards calcined, and it will be observed that the ash, when gold is present, offers a purple color. This color should disappear quickly if the ash is moistened with bromine water. The test may be modified in the following manner. A quantity of the powder, 120 grammes, is covered with bromine water, and after agitating during the course of an hour, the solution is filtered. Upon adding protochloride of tin to the solution it takes a purple color, in the presence of gold, giving the reaction known as "Purple of Cassius." In the case of sulphides the ore should be previously roasted, and when the mineral contains a considerable proportion of carbonate of lime, it should be calcined in the presence of ammonium carbonate.—*Scientific American*, Nov. 11, 1899.

Glutol.

This is the name given to a substance produced by the action of formaldehyde on gelatine in aqueous solution. A. Henry has made a careful study (*Thèse de Lyon*, 1899) of its antiseptic properties. The method of preparation is as follows: 500 grams of gelatine are dissolved in a sufficient quantity of water, 25 grams of pure formaldehyde are added; the whole mass is dried in an atmosphere charged with vapours of formaldehyde, and reduced to powder. The substance must be kept in a dry place. Glutol is used in the form of a powder obtained by scraping the mass. It is of a grey colour, odourless, and tasteless, and acts by continuous liberation of formaldehyde produced by the cells of the tissues with which it comes in contact; and it would appear that only tissues which are still vital have this power, and that formaldehyde is not set free by contact with dead tissue. On this account formaldehyde would seem to be of use in the case of wounds, ulcers, etc., where there is little tendency to cicatrisation from any cause whatever; thus, chronic varicose conditions, diabetic sores, trophic lesions such as occur in certain nervous diseases, are cases where it is indicated. It is also useful in venereal sores, syphilitic or otherwise; the chronic suppurative foci of tubercle and deep burns. In short, in those cases where iodoform has up to the present proved of greatest service, glutol may be employed, and the advantages which it presents are the continued liberation of an antiseptic principle which is much greater than that of iodoform. The absence of toxic or irritant properties, of odour, are further important points in its favour.—*Brit. Med. Journ.*, December 9, 1899.

Hereditary Albuminuria.

This subject has been investigated by Fieux, who has made some interesting observations on the occurrence of albuminuria in children (*Journ. de Méd.*, July 25th, 1899). It would seem that the children of mothers suffering from eclampsia or chronic albuminuria may show this condition from birth, and the author has been able to demonstrate actual lesions in the kidneys *post mortem*. In ten children whose mothers were non-albuminuric 1 only showed traces of albumin, while in 4 whose mothers were eclamptic 3 showed albuminuria while the mother of the fourth was only very slightly affected. From these cases and many others of the same nature it would seem that albuminuria may be transmitted from the mother to the child, and that this condition in the child may be prolonged considerably over early infantile life, and probably prepares the way for future attacks of serious nephritis in the course of the ordinary diseases of childhood, such as scarlatina, mumps, etc. In the same article Talamon is quoted as holding that a great number of cases of Bright's disease without obvious cause may probably be due to maternal origin. This would explain the occurrence of albuminuria in several children in one family, of which cases have not been infrequently recorded. The same writer suggests that many cases of so-called albuminuria may be hereditary. The importance of the subject is great, and should a mother be known to suffer from albuminuria, the children should be carefully examined, and every effort made to prevent the occurrence of scarlet fever or other febrile disorders, as the risk of nephritic complications would, according to the author, be greatly increased.—*Brit. Med. Journ.*, December 2, 1899.

Total Resection of the Bladder.

Modlinski (*Centralbl. f. Chir.*, No. 27, 1899) in a communication to the German Surgical Society, states that the feasibility of total resection of the bladder has been proved both by experiments on animals and by a series of operations on the living human subject. Up to the present time this operation had been practised on 12 patients—on seven males with four deaths, and on 5 women with two deaths. The author has performed the operation in two cases, one of which proved fatal, whilst the other had very good results. Extirpation of the bladder, it is held, is indicated by the following conditions: (1) When a less serious operation has been followed by early relapse, or the bladder wall is extensively involved in the growth of the tumour, even though this be of a benign nature, as, for instance, a papilloma, a myoma, or a cyst; in such cases the prognosis of the operation may be regarded as favourable. (2) In cases of malignant and more or less extensive growths, especially those that are situated in the region of the urethral orifices, and have not spread beyond the limits of the bladder and attached neighbouring organs and tissues; the prospects of operative treatment in such cases, however, are not good. (3) When the bladder is involved in a morbid growth which has spread to it from the uterus. The pain and trouble caused by such a condition as this can be relieved by nothing short of simultaneous removal of both organs. The bladder is best removed in the male by the sacral incision, such as is made for removal of cancer of the rectum; in the female by a suprapubic incision or through the vagina. In the female the ureters may be made to discharge the urine into the vagina. In males a reservoir for the urine may be made by detaching the lower part of the rectum and closing its upper divided extremity, the lower end of the upper segment of gut being fixed to the margins of the external wound.—*Brit. Med. Journ.*, Nov. 25, 1899.

The Histology of Neuroglia.

The structure which in the nervous centres intervenes between the nerve cells and nerve fibres has been the subject of careful research by Erik Müller, who gives his results in the *Archiv für Mikroscopische Anatomie* for October last. The application of the method of Golgi for staining tissues has rendered it certain that the neuroglia is of ectodermal origin, and yet, as Weigert has remarked, we have here a paradox that a structure may be of ectodermal origin and yet may present the histological characters of connective tissue. Müller supports the view that the glia fibres, alike in their morphological, physical, and chemical characters, must be regarded as a differentiated product of the glia cells. Holding the opinion that the neuroglia is a kind of tissue he considers that it constitutes a transition between simple epithelium and connective tissue, presenting points of similarity to both. Herxheimer and Kromayer, have, on the one hand, observed in the epidermis peculiar fibres which are only long processes of the cells; on the other hand, after the application of appropriate methods of fixing and staining embryonal connective tissue specimens may be obtained which from a morphological point of view are very similar to neuroglia. Müller has himself obtained from the tooth pulp of an infant, after fixation in solution of formol and bichromate of potash and subsequent staining with iron and hæmatoxylin, branched cells the processes of which form a thick felt of intertwining fibres staining deeply, whilst the cells themselves remain perfectly uncoloured. As regards the function of the neuroglia Müller regards it as a typical form of supporting tissue, and he is unable to advocate the suggestion made by Ramon y Cajal, according to which the glia cells possess contractility and may be regarded as a variable isolation apparatus for the nerve currents. He is, on the contrary, entirely opposed to that view. He gives two plates in which the characters of the neuroglia under the microscope are carefully delineated, chiefly as seen in the nervous system of amphioxus, of the myxine, of acanthias, and of the telecostean fishes.—*Lancet*, Dec. 2, 1899.

The Treatment of Yellow Fever by Potassium Bitartrate and Salol.

Edward F. Nunez, of Santiago, Cuba (*Phil. Med. Journ.*, Nov. 11th) says that since the present outbreak of yellow fever, while on duty at the United Army General Hospital, and later at the Yellow Fever Hospital, he had adopted a line of treatment which has given most satisfactory results. The treatment is based on the antiseptic plan, and its efficiency appears to be in direct relation with the promptness of its administration. Having in view, he says, the infectious character of this disease, and considering that the stomach is the organ primarily invaded and affected by the pathogenic microorganism, whatever it may be, it is evident that a therapeutic agent capable of destroying it, or at least attenuating the virulence of its toxin, would certainly bring the disease to a favourable termination. One of the principal advantages claimed for this treatment is that it can be administered without disturbing the stomach and without ever giving rise, so far as experience goes, to disagreeable after-effects if judiciously carried out. Nunez begins the treatment by giving the patient a dose of calomel, followed by a saline purgative, generally

Epsom salts, and immediately after he commences the use of a solution of potassium bitartrate and fresh lime juice, and the salicylate of phenol or salol, the latter preferably in tablets, every two, three, four, or six hours, according to indications. With the cream of tartar the urine is rendered alkaline, and the renal function is stimulated by its diuretic properties. The local action of this agent on the stomach is no less important since it is pleasant and soothing, quenches the intense thirst, relieves the nausea and vomiting, and, by its laxative properties, ensures free movement of the bowels. With salol a twofold action is obtained; first, the antisepsis of the intestinal tract; and, secondly, the reduction of the temperature by its antithermic properties. The drug is well borne, not only by the stomach, but also by the kidneys, and apparently tends to reduce the amount of albumen in the urine. No alcoholic drinks or nourishment are allowed during the first stage of the disease. The epigastralgia and rachialgia are treated exclusively by counter-irritation with sinapisms. During the second stage the salol and cream of tartar, accompanied by large quantities of diluent drinks, especially warm water to which a few drops of lime juice have been added, is to be continued until defervescence takes place.—*Brit. Med. Journ.*, December 2, 1899.

Influence of Lime on Malarious Soil.

M. Grellet recently communicated to the French Academy of Medicine some interesting observations on the influence exercised by lime on a malarious soil. Up to the year 1840 malaria was rife among the inhabitants of Châtillon-sur-Loing; after that date it disappeared completely. Except in one particular no difference had been made in the agricultural methods employed, no drainage or sanitary works had been carried out, no change had been made in the mode of living. Between 1824 and 1840 lime was applied to the soil for purely agricultural purposes and by the time the whole plateau had been thus treated malaria had disappeared. As an indication of the extent to which the soil was affected, it was noticed that a sorrel which requires a certain amount of acidity in the soil, and which formerly abounded in the fallow field, died out completely. Among the observations adduced by the author in support of his theory are the following: Lime is found at Châtillon a considerable depth below the surface in a stratum of marl. Near the edge of the plateau this marl forms the sides of a swampy valley, just the place which would be expected to be very malarious. Now the valley was healthy, while the plateau above it, separated from the marl by an impervious stratum of flint and oxide of iron, was fever stricken. Similar disappearances of malaria elsewhere (Puy-de-Dome, Allier, Cher, etc.) have followed and would seem to have been due to the application of lime. The author maintains that the geographical distribution of malaria supports his contention that malaria is not found where the soil contains a sufficient quantity of lime. Lower Egypt, for instance, which with its marshes, high temperature, etc., might be expected to prove a hotbed of malaria, owes its general exemption to the relatively large amount of lime in the Nile water and mud (118 grams per cubic metre in flood time, according to Müntz). Still more striking are the differences observed in adjacent district in France. La Beauce on the right bank of the Loire is free from malaria. Across the river, la Sologone, on clay and gravěl, suffers severely. The north (calcareous) coast of France is free from fever; the west coast, south of the Loire, is malarious, its soil is clay. No accurate observations have been made as yet on the quantity of lime necessary to kill the malaria parasite. At Châttillon-sur-Loing 27,000 kilos per hectare (roughly about 10 tons per acre) were employed. At Lapeyrouse the amount used on granite soils and on clay were respectively 6,400 and 8,800 kilos per hectare (about 2½ and 3½ tons per acre). M. Grellet makes no mention of the mosquitos at Châtillon. The value of a process which at once checks malaria and improves the soil is obvious, and it is to be hoped that further observations may be made on the lines indicated by M. Grellet.—*Brit. Med. Journ.*, Dec. 9, 1899.

Goethe: A Psycho-Pathological Study.

Dr. P. J. Möbius, who has for several years been a diligent investigator in neurological and psychiatric medicine, contributes an interesting study on Goethe and his writings from the psychiatric and pathological standpoint. Möbius has not followed in the footsteps of Max Nordau and decried the works of the brilliant German author, but has made an acute and scientific study and analysis of the facts in Goethe's life and work, and has been able to point out interesting parellelisms between genius and marked mental manifestations. Möbius truly points out that in the portrayal of the passions, the impulses and the emotions of men, the poet is naturally drawn towards the pathological. The more a poet is a fine mirror of reality the more truly will the abnormal, and the pathological, like normal, be presented in his writings. The materials of the pictures which Goethe gives in his writings of diseased mental states must be regarded as having been drawn from observation as well as from conversation with others, and in this connection we may note that Goethe was well acquainted with Heinroth, the celebrated alienist. A young man afflicted with dementia lived as ward in Goethe's father's family. Rechtecandidat Clauer appears to have been the original of the young lunatic in the *Sorrows of Werther*. Both Lenz and Zimmermann (the latter the author of well-known mystical religious work on *Solitude*) were also personally well known to Goethe, and both became at one time the subjects of mental alienation. Goethe makes use of the expression "*Seelenleiden*" (ills of the soul); he speaks of the "*Tollheit*" (phrenzy) and "*Raserei*" (fury) of the mad, and applies the word hyponchondria as it is used now to the irritable, gloomy, and melancholic temperament which is so prone to develop sad depressing delusions. Goethe also seems to have had a peculiarly intimate knowledge of transitional pathological and mental states. He evidently had abundant opportunities of observing these amongst the numerous pathological men and women whom it was his fate to know. Goethe regarded the passions as the cause of mental disturbance. By their excitation a level may be reached where transition to insanity takes place. He also makes Werther say: "My passions were never far removed from insanity." A most interesting chapter deals with Goethe's parents. His father possessed stability and a strong love of order, which at times degenerated into pedantry, and in contrast to his son he was unimaginative, morose, and narrow-minded. In old age he broke down mentally, and died a senile dement. The qualities of the mother seemed to have been prepotent in Goethe. In his features, particularly his eyes and mouth, he strongly resembled his mother. From her, also, he inherited his "joyous nature and a turn for poetising," his warm imagination and his love of the sensuous. His brothers and sisters all died young except one—his sister Cornelie—whom Goethe describes as "a most strange mixture of strength and weakness, of self-will and pliability." She was reserved even to her husband, had a disgust for married life, became hypochondriacal, and after a short unhappy married life, died in her second confinement. Goethe when a youth in Leipzig suffered from hypochondriasis. His temperament, as he himself relates, wavered at this time between the extremes of unrestrained merriment and melancholic depression. A long period of invalidism followed, and when he next visited his father at Frankfort Goethe appeared like a patient whose illness was "more of the soul than of the body." He suffered from neurasthenia afterwards. Goethe was subject to periods of exaltation sometimes of acute excitement. His adolescence was marked by periods of irritation and of powerful erotic impulses. With manhood these gradually subsided, but the emotional hyperexcitability never entirely disappeared. In periods of excitement he wrote poetry and fell into love affairs. But his keen analytical and powerful intellect always triumphed in the end; hence his literary productive capacity remained to old age.—*Brit. Med. Journ.*, Dec. 9, 1899.

CLINICAL RECORD.

Indian.

A CASE OF STIFFNESS OF THE NECK, CURED BY *DULCAMARA*.

By Dr. M. L. Sircar.

On the 5th of this month (Dec.) I was asked to prescribe for an old lady of nearly eighty suffering for four days from a most painful stiffness of the posterior muscles of the neck with most excruciating pains from the slighest movement. On inquiry I found that this was brought on by a bath in very cold water. There was a constant pain in the part which was described as of a throbbing character, but the pains that would come on from movement however slight to one side or the other or forward or backward, were so torturing that the patient had to sit upright like a board without being able to rest her head upon a pillow, and thus had to pass two nights without a wink of sleep.

There was a temptation to try *Bryonia* from the aggravation from movement and from symptoms in its pathogenesis similar to those of the patient; but having regard to the cause I gave *Dulcamara* 6x, and the result was remarkable. The medicine was given at 9 in the evening, and the patient within half an hour fell asleep almost freed from pain, lying in a horizontal position with her head on a pillow. She rose in the morning with pain nearly gone. The medicine was continued for 4 days. The recovery was perfect. Would Bryonia, had it been prescribed for the similarity of symptoms, have succeeded in effecting such a cure?

Foreign.

SOME POISON CASES.

By Frank Wieland, M. D., Chicago.

In an article published in a recent medical journal the writer spoke of disappointment in the emetic properties of Apomorphia.

In possibly a dozen cases of poison the drug has never failed me. I think he should not have depended on a single injection, as when a patient is in a state of collapse, response to any drug is apt to be slow. I usually repeat the hypodermic within five minutes, if vomiting does not follow the first.

Case I. I was called at midnight a week ago, to see a woman who had swallowed a quantity of carbolic solution, which she had been using as a gargle. I saw her within twenty minutes after she had taken the poison. Her agony was dreadful to witness. While I was getting the particulars of the case, she passed into a convulsion, assuming the most complete opisthotonos I had ever seen. I hastily saturated my handkerchief with chloroform, covered her mouth and nose with it and almost instantly she relaxed. Her heart, which had been very weak before the convulsion, apparently ceased beating during it, and we could detect no radial pulse for some time after relaxation.

Thus far I had done nothing for the poison, and had lost fifteen minutes. I gave her a hypodermic of Apomorphia; she was unconscious, but in about about two minutes she vomited the supper she had eaten and a large amount of albuminous fluid. As soon as she was sufficiently aroused to swallow, I gave her raw eggs but they were not retained.

She was so badly burned that everything caused spasm of the œsophagus. After the stomach was emptied, the heart became stronger; the patient remained semi-conscious. In about half an hour she took, and retained, a small amount of black coffee. This was repeated at hour intervals for thirty-six hours. I gave her Arsenic 1 m to counteract the burning in the mouth, œsophagus and stomach, and it seemed to relieve.

I was much assisted in my successful handling of the case by the fact that the stomach was full when she swallowed the fluid, and the acid dilute. I have always taught my classes certain general rules or principles in treating poison cases. I have never had any respect for the numerous antidotes that are so rare and unheard of that one would rarely be able to procure them, especially in an emergency.

A few simple measures kept in mind for each of the three great classes of poisons will allow one to bring his patient through, if he meets the case in time.

CASE II. This case was a little more obscure. The patient had brought from a neighboring druggist a bottle of citrate of magnesia at 9-40 P.M. She had drunk half of it and gone back to bed; at ten, as the clock was striking, she awakened with an intense thirst; she could not find the pitcher, but in groping about in a dazed way, she came upon the citrate bottle, and drinking what was left of the fluid, she went back to bed.

I was called soon after midnight to find a woman with widely dilated pupils jabbering constantly and reaching out in the air for imaginary insects. Now and then she would try to get out of bed. She was not quiet a minute, but would begin a sentence and after a few words would begin the senseless jabber. She told me she had "floated" upstairs to the servants' room to get aid. The floor of her room was strewn with matches; she would light one, try to reach the gas jet and then would become unconscious. As she was delirious, I examined the room very carefully for a clue to possible intentional poisoning, but I could find nothing except the empty citrate bottle.

Her son had gone with her to the drug store for the magnesia and knew that she got nothing else. When she drank it, she said to him, "This doesn't taste like the magnesia I have had before." As is too often the case, she refused to touch the emetic we have prepared, so I gave her a hypodermic of Apomorphia, although I felt sure we had an alkaloid to deal with, and that it was all absorbed. Not until the second injection did she vomit, but the quantity then was sufficient to please any one. The pulse was very rapid, too rapid to count, and even in the delirium she complained of dryness of the mouth and throat. Her symptoms were all those of Atropia, and I gave her Morphia $\frac{1}{8}$ gr. as a physiological antidote. I also prepared some Bell. 1 m, which she took every fifteen minutes for some hours. The next morning she had a bowel movement, black as ink and horrible in odor. She remained delirious for about twelve hours, and was in bed one week. She has never quite recovered from the nervous symptoms. There was left a half drachm of the fluid in the bottle and I took it to the laboratory to test for Atropine. Instead of a purple reaction I got a dark green. I still feel convinced that I had Atropia to counteract, though possibly not that of Belladonna. To avoid publicity the case was never investigated, to the evident satisfaction of the druggist.

CASE III. I never shall know the complete history of case No. 3, as I never saw the patient conscious. The man in the case lied so badly that I told him no explantions were necessary, unless the girl died, and then he could make them to the police. I was called at 3 A.M. to see a woman who was dying, the messenger said. I found a girl lying across a bed breathing very, very slowly, and stertorously. The pulse was of fairly good volume, but irregular in the extreme. I examined the eyes and found the pupils contracted to a mere point. I decided upon Opium in some form as the poison, but promised the terrified young man no results. I caused her to vomit, using Apomorphia, then prepared some Nux in half a glass of water and gave her of this every fifteen minutes until I saw reaction. Meantime we gave her coffee, with some difficulty to be sure.

We would open her mouth, pour in some coffee, and she w ln,aʇod times, swallow it. I am forced to say, however, that more ran out on the pillow than was swallowed. We also rubbed her limbs with brandy, as there seemed to be no circulation in the legs, below the knees, and there was marked cyanosis. I remained several hours with her and then left, as she seemed to be returning to consciousness. The young man came later to pay the bill and told me the girl had made a good recovery.

CASE IV. Case 4 was that of a servant girl who took a quantity of creosote. The symptoms were those of carbolic acid poisoning. After the patient had vomited, the immediate danger was over, although the constitutional symptoms were pronounced during the following week. I kept her well stimulated and on a milk diet. When I last saw her she was a nervous wreck as a result of her experience.

CASE V. In case No. 5, the patient had drunk a small glass of Ammonia by mistake for Rubinat. I do not think she swallowed much, although some must have entered the stomach. She was practically in convulsions when I saw her, and suffering intensely. Her friends kept insisting, with the usual logic of friends in these cases, that I use a stomach pump. I do not think that a stomach pump or tube should ever be used after an acid or alkali.

Examination showed a mouth and pharynx completely denuded of membrane, and a swollen and thickened tongue. We gave her milk; it was instantly rejected, but so changed that I felt sure we should get results. After a time she swallowed some. This she vomited, but the emesis seemed to ease her.

For her very irregular heart, we gave her hypodermics of brandy. We all know that acids are chemical antidotes of alkalies, but I know that no sane man would ever have given an acid, however dilute, to further irritate the raw mucous membrane. After the stomach has been emptied, our main dependence must be upon supportive measures, except in the case of alkaloids. This woman made a good recovery, although she could retain no food for some days.—*Medical Advance*, October, 1899.

CASES OF INDIGESTION ATTENDED WITH DIFFICULTY OF DIAGNOSIS.

Dr. M. P. Smithwick gives the records of four cases (in the *Boston Medical and Surgical Journal* for Oct.) and points out the methods to be pursued in arriving at an exact diagnosis in cases of indigestion with doubtful or uncertain symptoms.

CASE I. A woman, aged 22 years, had suffered from pains in the epigastrium for six years. She had had occasional attacks of vomiting and had sometimes fainted. A week before admission she suffered from severe epigastric pain which was increased by food and by local pressure, and from several attacks of vomiting, the last of which caused her to throw up a considerable amount of blood. She became extremely pale and anæmic and during her stay at the hospital the vomiting of blood (hæmatemesis) was repeated several times. The contents of the stomach were found on examination to contain free hydrochloric acid and a considerable amount of pepsin. The patient rapidly improved on a milk diet and was duly discharged. Two months later she returned to hospital complaining of similar but milder symptoms. The diagnosis made was acute gastritis and not, as was at first suspected, gastric ulcer.

Case II. The patient was a man who had suffered for 10 years from pains in the epigastrium which came on usually at about 3 A. M. and lasted about four hours. He was neurotic. All the physical signs except the salol test were negative. He was advised to avoid excitement and worry and was told that his pain was imaginary. At the end of two weeks he seemed to be much better and two weeks later he was pronounced cured.

Case III. The patient was a man, aged 30 years, who had had chronic diarrhœa for eight months. Examination of the contents of the stomach showed the absence of free hydrochloric acid and the presence of lactic acid and gave evidence of delayed digestion. He was given hydrochloric acid and pepsin and put on a special diet of a light and easily digestible nature. Marked improvement followed and the patient rapidly got well. Dr. Smithwick believes that in the examination of doubtful or difficult cases it is necessary to determine the motor power of the stomach, its size and position, and the amount of acids and pepsin, together with the degree of digestion present in the contents of the stomach. The contents should be removed one hour after the ingestion of an Ewald test meal, of which a quantity equal to 300 cubic centimetres should be given. It is best to give the test meal "in the physician's office." Before doing this, however, the stomach should be moderately inflated with air and its position determined. When the test meal is withdrawn the patient should be made to swallow a sufficient quantity of water to enable the area of dulness of the stomach to be mapped out by percussion. When the above methods are followed no case need present any real difficulties in the way of diagnosis.

Case IV. As an illustration of the value of chemical analysis he mentions the case of a man, aged 40 years, who had suffered from dryness of the mouth, nausea, and vertigo for some months. Physical examination was negative, but chemical analysis showed a reduction in the proportion of hydrochloric acid and a considerable increase in the quantity of lactic acid in the stomach during digestion. After he had taken suitable quantities of the former acid and had followed a carefully regulated system of diet the patient was cured. For inflation of the stomach Dr. Smithwick recommends the pumping of air rather than the administration of divided Seidlitz powders.—*Lancet*, December 2, 1899.

Gleanings from Contemporary Literature.

ANCIENT AND MODERN QUACKERY.

An Address Delivered before the Charing-cross Hospital Medical Society on Oct. 19th, 1899.

By T. W. Eden, M.D., Edin., M.R.C.P. Lond.,
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Gentlemen,—When your secretary, Mr. Unwin, asked me, in the middle of the hot weather last summer, to read a paper before this society on some subject of general interest, I agreed without hesitation, because when the temperature reaches 90 degrees in the shade a man will agree to almost any proposition that is made to him. Being pressed for a subject I was, however, quite unable to think of anything at all suitable to the occasion and, in an evil hour, upon a specially hot day, I bethought me of the subject of "quacks," upon which I once spent a little time for my own amusement. I have been engaged ever since in regretting my decision, for it soon became clear to me that the subject was quite an unprofitable one from every proper point of view. I have found it impossible to treat the subject seriously, but I am not without hope that even this ill-arranged excursion into the more or less disreputable practices of our art may be of interest even if it does not tend to edification.

I should at the outset deprecate any attempt to define precisely what is meant by "quackery" or "quacks." For one reason the word "quack" of itself conveys so much meaning, derived as it is from the blatant and unsympathetic cry of the domestic duck, that it seems a pity to limit its significance by a definition, and, further, this gives us clearer scope in the application of the term to persons whom we desire to deride. For instance any unduly successful fellow-practitioner must be naturally suspected of quackery, else why does he succeed more than his fellows? and any method of treatment of which we are ignorant, or which we are unable from lack of skill to employ, it is convenient for us to decry as quackery. As Mr. John Morley said of the "jingo," so we say of the quack—"I cannot define him, but I know him when I see him." But, speaking loosely, any boastful pretender to healing knowledge and skill which he does not in reality possess may fairly be called a "quack."

During the fifteenth and sixteenth centuries, when quackery seems to have been most prevalent, there were three professions open to the adventurous minds of those days—namely, the professions of witchcraft, sorcery, and quackery. Some persons seem to have practised all three for mixed specialists were known even in those days. The importance of these callings may be gathered from the amount of persecution to which their exponents were subjected. The most deeply reviled of all was of course, the witch, who, one might say, has been reviled off the face of the earth, although there can be no doubt that she was the least harmful of the three. The sorcerer, on the other hand, is well known to us in these days but under rather different guises from those of 300 or 400 years ago. The practice of sorcery is now conducted in sumptuously furnished apartments in Bond-street by good-looking persons of both sexes who cast your horoscope for the moderate fee of one guinea. And they do it delicately, by merely looking at the palm of your hand or inspecting your writing through a lens. Their present difficulties, their future fate, and, worst of all, their past exploits, can all be revealed to those who have faith in their hearts and a guinea in their pockets. This is the legitimate and recognised practice of sorcery, and it is by no means to be confounded with the reprehensible practices of the itinerant sorcerer who generally lives in a caravan and will tell you all you ever knew for a fee of sixpence. These persons are rightly committed to prison because it is obviously wrong to do the thing so cheaply.

The principal characteristic of the modern quack appears to be his profound conviction that the prevailing need of mankind is for purgatives. Invitations to take a pill beset you upon every side, and the conclusion seems inevitable that in another generation a new distinction between man and the beasts will have arisen—namely, the inability of the former to empty his rectum without the aid of purgative drugs. Another characteristic of the modern quack to which I shall have to refer again later is his comparative harmlessness. This is sufficiently indicated by the fact that the medical profession has ceased to persecute him after the manner considered necessary by their fellow practitioners of two or three centuries ago. A whimsical French writer, Cadet de Gassicourt, described those of his day as follows: "Insects very venomous of the odor of suckers, found in all countries and in all latitudes. Their characters are very varied—some have brilliant elytra, velvety and studded with gold; others have them more coarsely formed, dull, not entire, and marked with rents. Their intestines have an enormous capacity, the heart is wanting or very small. They attack man exclusively, their stings being always injurious and sometimes moral. They may be divided into two great groups, circulatores phanerorrhynchi, that is quacks who practise in public, and circulatores cryptorrhynchi, that is chamber quacks."

It is probably impossible now to determine who was the first quack and who the first quack patient. It appears that feminine human nature has always been especially apt to become the prey of quackery, and this I take it is directly due to the exploits of our mother Eve, who greedily swallowed the nostrum of the serpent recommended to her by that smooth-tongued one as an unfailing remedy for the innocence she had become so weary of. Nor must we blame her, for if any compound could be placed upon the market to-day which offered a knowledge of forbidden things to all and sundry with safety to themselves and at reasonable rates, there is little doubt that the syndicate running it would quickly amass a large fortune.

In considering ancient medical practice we are at once met by the difficulty that we are practically unable to distinguish what was quackery from what was the legitimate and recognised practice of the time; the absurdities into which the ablest minds were led by the unfettered exercise of a speculative empiricism seem to be so great that nothing could transcend them. We must remember that in those days the scientific habit of accurate observation was unborn and the prevalent idea of culture was the cultivation of philosophic speculation.

I shall not so far comply with convention as to quote Hippocrates to you but I must refer to the practice of his great disciple Galen. Claudius Galen was born in 131 A.D. in Pergamos, Asia Minor, and was one of the most prolific medical writers who ever lived. His system of philosophy is interesting because it has passed *en bloc* into the medical terminology of our time. He recognised four "elements" in nature : water, fire, air, and earth. With these elements he associated certain "qualities"; with water the quality of moisture, with fire that of warmth, with air that of cold, and with earth that of dryness. In the human body he recognised certain "humours" corresponding to these four natural "elements" and their "qualities." These "humours" were mucus, made up of water and air, representing, therefore, damp and cold ; yellow bile, made up of fire and earth, representing therefore warmth and dryness ; black bile, made up of air and earth, representing therefore cold and dryness ; and, lastly, the blood, which was made up of an admixture of these three, the resultant mixture representing warmth and moisture. The temperament of the individual, he thought, was ordained according to the proportions in which these "humours" were mixed together in the body. One in whom mucus predominated was of the damp and cold variety, precisely what we still term the phlegmatic or mucous temperament. One with excess of yellow bile was hot and dry and therefore choleric, anger being supposed to dwell in the liver. One with excess of black bile was cold and dry, the melancholic temperament, while one with excess of blood was warm and moist, the sanguinary temperament. He believed that disease arose from unequal distribution of the body humours and his remedies were designed to supply or suppress them as required. He had a very large pharmacopœia and was fond of prescribing pills which, curiously enough, he frequently ordered to be coated. The influence of Galen upon the medical practice of the world has probably been surpassed only by that of Hippocrates. Until the discovery of micro-organisms and their rôle in the causation of disease humoral pathology in some form or other, but directly traceable to Galen, held universal sway.

The earliest and the most famous reputed quack doctor who ever lived was undoubtedly the personage called Philippus Aureolus Theophrastus Bombast Von Hôhenheim, more commonly known as Paracelsus. There is no time to enter at all fully into his career or into the many questions which cluster around his teaching, but it is impossible to speak of quacks without making some allusion to their high priest. Paracelsus was born in 1493 in a small village near Zürich in Switzerland where his father practised as a physician. He studied medicine, alchemy, astrology, magic, and all the other pseudo-sciences of his day, passed many years in itinerant practice as a physician, travelling through all the countries of western and eastern Europe and it is even alleged that he visited India. On his return to his native land his popular fame became soon established by means of the remarkable cures which he is alleged to have performed, while his bold and original writings brought him to the notice of the fellow-practitioners of his art. In 1527, being then 34 years of age, he was appointed professor of physics and city physician of Basle. He sat himself immediately to reform the abuses current in the professson in his time and raised such a hornet's nest about his ears that within twelve months he had to flee from the place to save his life. Henceforth he resumed his wandering life and visited most of the towns of middle Europe, leaving behind him at every place a marvellous reputation as a healer of the sick. Finally he settled at Salzburg under the protection of the Duke of Bavaria and died at the age of 48 years.

Paracelsus was a voluminous writer and has left behind him 106 manuscripts nearly half of which are devoted to medical subjects, the remainder dealing with magic, alchemy, natural history, and philosophy. Some of his medical writings are of great interest, though mainly speculative in character, like all the writings of that age. One point upon which he was never tired of insisting we shall all agree with—namely, that the physician should be a man of wide and general culture. According to his lights Paracelsus therefore urged that he should be a philosopher, an astronomer, and an alchemist, and, lastly and most important of all, that he should possess a natural qualification for his office. He says: "Neither emperors nor popes, neither colleges nor high schools can create a physician; they can confer privileges and cause a person who is not a physician to appear as if he were one, but they cannot cause him to be what he is not. They can give him permission to kill, but they cannot enable him to cure the sick if he has not already been ordained by God."

Coming to his medical speculations, his theory of the transplantation of disease is perhaps the most interesting and also the best example of the specious reasoning of those days in which Paracelsus was such an adept. He taught that the anatomy of man was twofold; a part, and that the least important, could be studied by dissecting the bones, muscles, veins, &c; the other part was the principle of life which he called the "archæus." The archæus he taught, contained the elements of all cosmic influences and was the cause of the action of the stars upon the body of man. It was equally distributed throughout the body in a condition of health and it could cause or cure diseases according to the conditions under which it acted. The vehicle in which the archæus was contained he called the "mumia." This was an invisible substance containing the essence of life. If brought into contact with dying forms it would revive them. Further, he taught that man possesses a magnetic power by which he can attract certain effluvia of good or evil qualities just as a magnet attracts iron. A magnet can therefore be prepared out of vital substances which will attract vitality. Such a magnet he called a microcosmic magnet (the microcosm being the human body) in contradistinction to the inorganic or cosmic magnet and it could be prepared out of substances which had remained for a long time in contact with the body, such as fæces, urine, hair, and blood. If it is desired to construct a microcosmic magnet out of fæces they should be dried in a moderately warm and shadowy place until all humidity and odour have gone out of them. By this process all the mumia passes out and they are, as it were, hungry to attack vitality once more. If such a magnet is now applied to part of the patient's body it absorbs vitality from the part in the same way that a sponge absorbs water and will thereby allay inflammation because it attracts the superabundant magnetism carried to that part by the rush of the blood. Further, the mumia coming from the body of a person continues for a while in sympathetic relationship with the mumia remaining in such person and the two react upon one another. If therefore the mumia is extracted from the diseased part by a microcosmic magnet, and the magnet is mixed with earth and a herb planted in it, the mumia in the magnet will be extracted by the plant and being set free will attract to itself the mumia still contained in the body of the patient, thus acting beneficially upon him. But it is necessary that the plant selected shall bear the signature of the disease with which the person is affected so that it will attract the specific influence from the stars. In this way, also, he taught that diseases can be extracted from a person and inoculated into a plant, and in a similar manner diseases may be transplanted into animals that are healthy or the virus may be transferred to other persons.

I submit that this theory, fantastic though it may at first sight appear, is not an unfair forecast of the modern theory of bacterial infection and the inoculability of disease. If for "mumia" we read "micro-organisms," Paracelsus was not so very far wrong after all. Micro-organisms, like mumia, are found in the blood and leave the body by the excretions, and if transferred to the bodies of other animals they will set up the same diseases. One cannot help regretting that Paracelsus did not go one step further with his theory. If it had occurred to him to administer portions of inoculated animals as a remedy to persons suffering from the same diseases, or to healthy persons in order to prevent them from falling a prey to such diseases, we should have had a reasonable forecast of the modern practice of preventive inoculation and the treatment of disease by antitoxin.

The details of treatment which Paracelsus based upon his theory are very curious. For the cure of toothache the patient is directed to take a splinter of blackthorn or willow after removing a piece of the bark from the tree, and with it to prick the gums until they bleed, then to replace the splinter in the tree and tie the cut up in the bark so that it will heal. The patient is thus cured and the willow, I suppose, gets toothache. For phthisis he recommends that the fresh urine of a patient should be heated in a new pot over a fire and an egg boiled in it; when the egg is hard-boiled some holes should be made in the shell and the urine then boiled down until the pot is dry. The egg is then to be put into an anthill when the ants eat it and the patient recovers.

It is difficult to find any independent testimony to the skill of Paracelsus, but one of the most interesting documents which he left is that entitled "One Hundred and Fourteen Experiments and Cures," written by himself towards the close of his life. The details of most of the cases are so fragmentary that it is difficult to pass judgment upon them, but there is nothing in them to show that the practice of Paracelsus was injurious or inferior to that of his day. Indeed, he often seems to have acted with sense and judgment. The following case of syphilitic ozæna was surely treated with admirable skill.

> Case 53. A certain man being long sick of the pox had two tumours and an ulcer in his nose, at the which every day there came forth great quantity of stinking and filthy matter, in whose nose I cast this decoction with a syringe :—Honey, 4 oz. ; common salt, 2 oz. ; washed aloes, ½an oz. ; juice of celandine. Mix them together. Inwardly he was purged with oleum mercurii.

His treatment for amenorrhœa was venesection and it seems to have been often very successful, for many examples are given in the list.

> Case 74. A certain woman who wanted her natural courses was thereby so tormented that she abhorred all men, yea, her very companions, whom I cured by opening the inward vein of the arm, because I could not find the vein of the leg called Saphena.

It is rather remarkable, too, that Paracelsus seems to have made considerable use of magnetism in the treatment of disease. He recommends it in "inflammations and fluxes, in ulceration, in diseases of the bowels, and uterus, and in hysteria." In the treatment of hysteria he directed the attracting (positive) pole to be placed above the uterus and the repulsing (negative) pole below it. In this way, he explained, "the nervous force controlling the movements of the uterus will be propelled towards its proper place."

As we are speaking of electricity this is perhaps the best place to make a short reference to Mesmer, although he belonged to a much later period than Paracelsus. Mesmer was a Viennese who flourished in the latter half of the eighteenth century, and being unappreciated in his own country he removed to Paris in 1778 and most of his work was done there. He claimed to be the discoverer of animal magnetism, but his notion of it was, as you will see, very different from that of Paracelsus. He certainly seems to have been the first physician who attemped to make therapeutic use of the influence, call it what you will, which some persons are able to exert upon the minds of other persons. This influence is now better understood, and as "hypnotism" it may perhaps find a restricted usefulness in certain classes of disorders. Mesmer believed it to be related to magnetism and at first made great use of metallic magnets in his practice. Later he discarded them and found that he could perform cures just as well by contact, by simply placing his hands upon the patient. Later still he reverted to the use of magnets, for he discovered that different objects, such as wood, glass, or iron, were capable of receiving the healing virtues from his body, which could thus be conveyed to persons at a distance. By simply sending a chip of wood to the patient he therefore found that he could cure many ailments. In Paris he invented his famous instrument called the "baquet," which was supposed to transmit the magnetic influences better than the simpler contrivances. It was a large oak chest or tub with appendages of iron which he used to charge with magnetism from his body and then send on a healing mission to a distant town. There can be little doubt that Mesmer quite deserves the designation of "quack," but Paracelsus was probably one of the ablest and most enlightened minds of his time.

Materials relating to the medical practice of our own country before the fifteenth and sixteenth centuries are not very abundant. Some interesting manuscripts were, however, recently discovered and have been published in the present year by the Rev. Professor Henslow relating to medical practice in the fourteenth century. They consist mostly of recipes which are unaccompanied by explanatory notes. so that little light is thrown upon the theoretical considerations upon which their application was based. They are of the same fantastic nature as those of Paracelsus. Stone seems to have been a prevalent affection in England in those days, for many of these old recipes are remedies for that affection. The following is an example :—

> *Ad frangendam petram.*—Take a cock that be twelve months old and kill him. Thou shalt find in his maw white stones. Take them and stamp them in a mortar with a pestle of iron, and temper it with wine and drink it.

Another equally curious one is this :—

> *To deliver a woman of a dead child.*—Take blades of leeks and scald them in hot water and bind them to her womb about the navel, and it shall cast out the dead child, and as soon as she is delivered do away with the leeks or they will cast out all that is in her body.

This may appear to us absurd, but we must remember that we do not know of any drug even now which will with certainty set the gravid uterus in action, and if the leeks did no good they could not do much harm.

Two hundred years later than this period there is ample evidence that quackery of the most pronounced and obnoxious kind flourished in London. The physicians of the time wrote angry denunciations of them, for the city seems to have been beset with itinerant quacks of all nationalities who were reputed to be possessed of unfailing remedies for all sorts and kinds of diseases. Many of them were venereal specialists and plied a brisk trade in mercurial preparations for syphilis, or, as it was called in those days the "French pox." Their principal method of advertising themselves was by means of handbills which they distributed wholesale, there being few newspapers at the time. A collection of these handbills has been preserved in the British Museum, most of them belonging to the Restoration period. By this time pills seem to have become the favourite kind of quack medicine and the following handbill is a fair example :

> An Advertisement concerning that excellent Pill of the late eminent and worthy Dr. Trigg of Tower Wharf, called by him the Golden Vatican Pill, famous for the Cure of most Diseases of either sex.
>
> Reader, be not so injurious to thyself as presently to commit this paper to the worst of offices ; it designs thy good, therefore first read (three minutes performs

> the task) and then use thy discretion. This Excellent Medicine is found most Eminent in the cure of the Scurvy, Dropsie, Jaundice, Worms of all kinds, all Diseases of the Heart and Lungs, all Impurities proceeding from Putrefaction, all Obstructions of the Liver, Spleen, Mesentery, and Pancreas. All violent pains in the head and all gripings in the guts, strengthens the Stomach, hinders Indigestion, purges the whole mass of blood, corrects all conditions which are the true and natural parents of all Rheumatisms and even the Gout itself. Effectually carries off those dregs in most bodies after the supposed cure of the ague, and is no less powerful to prevent the ill effects of large and late evening draughts, carrying off all that is harmful to nature; and that, too, with such gentleness and in so small a dose that no publick medicine doeth the like. This most excellent Pill is a cheap medicine, for twenty of them cost but two shillings, and half the number half the price.

I am sure I shall be pardoned for quoting also the following gynæcological advertisement:—

> In Holbourn over against Southampton Square at the Coffin and Child, next door to the Sugar Loaf and Roll, where you will see a Golden Ball hanging over the passage Door, liveth a German Gentlewoman.
>
> She cureth all women and maids of the suffocation or rising of the womb which may be occasioned through any rotten substance or through a corruption in nature, or by an imposthumation of the womb, which may be easily discerned, for there oftentimes proceeds a great dizziness in the head, anguish of heart, and inclination to vomit, much rising and tumbling of the belly from whence proceed very fatal accidents such as barrenness, inflammation of the lung, an unusual paleness, shivering in the limb, colic, strangulation, obstruction, and tertians of the Guts, &c..
>
> She also cureth outsinking, downfalling, or outhanging of the matrix in fourteen to twenty days, taketh stone from women and maids without cutting (which no woman save my mother did before me). I also cure the Morbus gallicus, with all its symptoms, and I dare presume that few has arrived to the perfection in this cure as myself.
>
> Those that cannot come to me let them but send their urine and on sight thereof I will resolve them what their distemper is and if curable will perform it at a reasonable rate.

The reference in this advertisement to sending the urine is rather interesting. The clinical urinary examination which is routine practice with us was unknown to the regular practitioner of the seventeenth century. Much to his annoyance and the depletion of his purse there arose a class of quacks whose practice it was to diagnose disease and cure it from simply looking at the urine. If for any reason the patient wished to conceal his ailment the method was a very convenient one. The *modus operandi* of these quacks seems to have been similar to that of Zadig and Mr. Sherlock Holmes. By shrewd observation they were able to make a diagnosis which astounded the simple-minded people of those days and brought them amazing credit and pelf.

Among his many accomplishments King Charles II., like other monarchs of his time, also practised as a quack doctor, for the following notice appeared in the *Public Intelligencer* of date May 14th, 1864:—

> His Sacred Majesty having declared it to be his Royal Will and Purpose to continue the healing of his people for the Evil (*scrofula*) during the month of May and then to give over till Michaelmas, I am commended to give notice thereof that the People may not come up to town in the Interim and lose their labour.

In addition to curing them of the Evil we are told that His Sacred Majesty was accustomed to give his patients a guinea each, which no doubt expedited the cure and it all helped to support the doctrine which he loved of the "divinity which doth hedge a king."

Faith-cures have, of course, been a common religious phenomenon in all ages and we do not now take them very seriously. The latest form of the thing is called Christian Science. Many astonishing cures of hysterical and neurotic men and women are reported by Christian Scientists and the method adopted is the usual one of suggestion, not hypnotic but religious suggestion. The suggestion made by these people is the bold one that pain and disease have not really existed since the Crucifixion and that it is all a mistake on the part of the patient to suppose that her back aches or that she cannot walk. In very many cases this is, of course, literally true, but if the regular practitioner spoke out so plainly he would be dismissed at once as a hard-hearted, unfeeling monster. The following story which I found in the *Christian Science Journal* for 1897 is fairly illustrative of these faith-cures.

> When I first came to the Christian Science I had been ill about three years; the doctors called my case nervous prostration and dyspepsia. The Christian Science healer gave me a little book called Daily Food, containing Bible verses for each day in the year. After receiving three or four treatments he said to me, "Now you can eat just what you want and it will do you no harm;" and it was true for I got even straw-berries and cream three times a day. My healer kept on treating me and I kept on eating both material and spiritual food, and in four months I gained 43 bounds. Then it was proven to me "That which goeth into the mouth does not defile the man but that which cometh out of the mouth defileth the man."

It would obviously be as unfair to doubt this lady's veracity as to criticise her logic; no doubt the healer did her good and we may join her friends and her regular medical atendant in congratulating her on the result.

There is not much time left to speak of present day quack medicines. Quack advertisements certainly do not now possess the piquancy of those old ones which I have read to you, and I strongly suspect that our own quacks would have been beaten out of the field by their predecessors of 200 years ago. Even our grandfathers were much better supplied with quack medicines than we are, for a strong point of the quacks of 50 years ago was to be found in the alluring titles which they invented for their remedies. We have nothing more romantic than Carter's Little Liver Pills and Mother Siegel's Syrup, but our grandfathers had the following to choose from: the Friend to Man, the Vital Balm, Lucas's Pure Drops of Life, Solomon's Balm of Gilead, Schults's Vegetable Acid Air, Dickenson's Drops for Fits, and Ward's Liquid Sweat.

The advance of chemical analysis has made it practically impossible to secure secrecy for any nostrum now. Not only have quack medicines lost their secrecy, but they have in consequence lost to a large extent their harmfulness. An analysis of the principal quack remedies shows that they are fairly useful compounds, and the element of quackery only enters where their use is advocated for so many different diseases upon which it is impossible for them to exert any useful influence.

I am afraid that I ought not to conclude without attempting to extract from the subject some moral or other, or at least an exhortation. I am sure that it is unnecessary to point out to Charing-cross men the undesirability of emulating such methods as those of the late eminent and worthy Dr. Trigg of Tower Wharf or of the German gentlewoman who once lived in Southampton-square, Holborn. But the moral of quackery I take to be this. Quacks exist largely because regular practitioners often fail to cure or relieve their patients. In the earlier days it was inevitable that such primitive methods as were then known should often fail, but it is a reproach to us that with all our boasted scientific progress the practice of the healing art, except in the domain of surgery, is making such scanty advancement. We are all so keen on scientific problems that we are apt to lose sight of the fact that in the eyes of our patients our value mainly depends upon the amount of relief which we are able to bring them. What they expect from us is not an elaborate diagnosis or a learned discourse on their disorder, but simply something that will do them good. One of the most accomplished physicians whom I have ever known took little or no interest in his patients between the stage of clinical diagnosis and that of post-mortem examination. That is the kind of medical attendant from whom people flee to find refuge in a quack. I take it that our duty is to spare no pains and leave no method untried which promises to be useful in combating disease, for we shall be ultimately judged, not by our academic distinctions or our contributions to science, but by the measure of success we have attained in discharging the task which Society has committed to us—namely, the relief or mitigation of suffering and the preservation of health.—*Lancet*, Nov. 18, 1899.

TREATMENT OF SKIN DISEASES.

It is a singular fact that the medical profession is not an unit in the recognition of the natural causes for all diseases of the skin. If there is one fact demonstrated in the history of medicine, the fact that injurious effects inevitably follow the repression or suppression of an eruption upon the skin by local applications is established. We have but to look at the sequellæ following the repression of the eruption in measles, chicken pox, small pox or scarlatina to be warned against everything that will "drive in" the eruption and do all in our power to assist Nature in her effort to protect the vital organs by forcing to the surface that which seriously interferes with the functional activities of the organism. Even the sudden suppression of perspiration by exposure to a draught, or the checking of the menstrual flow is followed by frightful possibilities. Who has not seen an irritation of the skin transferred to the mucous lining of the eyelid, the nasal passages, the bronchial tubes, the alimentary tract, the kidneys or the urethra, the inner skin, because it was not allowed to remain in the more innocent place, until the vital force had time to eliminate the cause through the natural channels of the body? What does it mean? What ought it to teach?

We must look *within* for the prime cause of all skin diseases. The local manifestation is simply evidence of an internal disturbance and is invariably preceded by more or less discomfort, due to the interference with the functional activities of the body ; and the appearance upon the skin of an eruption is generally followed by a period of calm, within, and a restoration of the normal activities of the internal organs. Nature may not be able to remove the local evidence of disease because the disturbing cause is too great for her *reserve* force. We are therefore called upon to *assist* Nature in this work and should use extreme care that our efforts do not take on the form of *meddlesome interference* through our *ignorance* of the kind of assistance actually needed. We have no right to assume that we can do a single thing, unless we work in harmony with nature's ways. In fact, we are utterly helpless until we have so studied the phenomena of life as to understand her plans of action.

How does Nature work? Where will we find her force? Is it in the nerve? Is it in the cell? You may draw from the body the blood, provided you keep the veins filled with a saline solution and something will soon convert that saline solution into blood. This something couldn't have been traces of blood cells, nerve cells or any other form of organised matter. It must have been immaterial in form and no better term can be applied than that given by Hahnemann—the vital force, energy, dynamis.

Can we assist Nature? There are four means that may be utilized : 1. Material from which she may select necessary elements for the natural repair of broken down tissue cells ; 2. Conserve her natural force by avoiding the obstruction of any of the natural channels of excretion ; 3. Refrain from adding any unnecessary burdens in the form of injudicious eating or drinking, or the dissipating of the reserve force by unnecessary demands either mental or physical, and 4. *Supply a force*, of the right nature to *meet any contingency*.

It should be borne in mind that *we* cannot *make* the organism appropriate anything ; that *we* cannot *repair* the broken down tissues ; that all that is required of us is to supply wholesome material and if the vital force causes the organism to reject it, that the trouble is not with the material, or the organism but in a disturbed relationship between the organism and the energy back of it, and supposed to be controling its functions. This is disease. The whole trouble may be due to the fact that the intelligence (?), the will, has been over-taxing the vital force by over-eating or drinking, in which case elements designed for the repair of broken down tissues have been improperly prepared, and consequently were rejected with the result that the skin—the terminus of one of the drainage canals received the material and we see the *effect*. In this case, the province of the physician is to prohibit the continued abuse ; and if this does not arrest the disturbance, attention must be directed to the mental state, because as a rule indiscretions are entered upon with eyes wide open to the consequences.

Following the hypothesis a little farther, it might be found that this mental perversity was due to some disturbing factor in the environment,

e. g., social position, family troubles, etc. In which case, the *exciting* cause must be removed before we can hope for aught but palliation from any internal medication. Don't you see that this all leads back from the skin and directs our attention elsewhere if we would intelligently *assist* Nature?

The investigation for an *exciting* and a *constitutional* cause may reveal the fact that the *exciting* cause is located *upon* or *within* the skin. That it consists of another *material* organism. In this case, the best assistance would be found in the employment of the least harmful *material* agent that would effectually remove the *exciting* cause when the vital force might be able to take up the work and repair the damage without further aid. The mission of the *local* application is necessarily limited to this narrow sphere. We will be met at this point with the query: What will you do when there has been such a destruction of the skin as to cause intense suffering from exposure of peripheral nerve ganglia? There can be but one answer, protect the denuded surface by the most efficient, *non-medicinal* substance possible.

Let us consider some of the reasons given why local applications are made in the treatment of skin diseases.

Protection. No one will deny the expediency of this measure in certain cases, but common sense ought to show that the protection is only needed where there has been an extensive destruction of tissue and that in this case it should be absolutely void of medicinal properties. There is an unlimited variety of valuable expedients, so there can be no necessity for encroachment upon forbidden ground.

Cleanliness. The same argument holds good in this case. Absorbents are prepared to meet almost every contingency. Pure water and soap unmedicated are seldom counter indicated.

Disinfectants. Most of the germs which infect a discharging ulcer act as scavengers feeding upon the broken tissue and ceasing to exist as soon as the source of nutrition is cut off. As a rule, strict asepsis meets every requirement in this direction.

Softening, maceration, etc. This comes under the head of *meddlesome interference* and does greater harm than good. If the discharge forms a crust, it offers the most perfect protection to the tissues beneath that can be imagined and if pus is retained thereby, it gives indications for the remedy which acting from within will assist Nature in eliminating the cause. The peculiarities of the discharge sometimes afford the best means for determining the curative agent.

Hastening the cure. This has been saved for the last because it must receive careful consideration. It will be noted that we have only used the words "*hastening* the cure" because there are many who might concede that the *main* dependence was to be placed upon the *internal* remedy and at the same time insist upon the efficiency of the *local* application. With such the justification would be found in the fact that the local manifestation certainly disappears with greater rapidity under the combined effect of the local with the internal medication than when employed separately, but no disease can be said to be cured until there is no tendency to return and as we said in the beginning it is not wise to crowd Nature.

It does not necessarily follow that a cure has been effected with the disappearance of the local manifestation of the disease whatever the means employed. The history of the case may show the sudden disappearance of the eruption without any treatment and the return of the same without warning and apparently without cause, so we must take into consideration every factor contributing anything to the etiology of the disease and be guarded in our declarations until all evidence of the local disease has disappeared, and *with it all tendencies pointing in that direction.* It is not wise, therefore, to deliberately remove a single guide board or sign until the necessity for its existence is gone. It is self-evident that no ulcer, abscess, pimple, pustule, or excoriation can prolong its existence after the cause has been removed. It is equally self-evident that the cause for all forms of skin disease can be traced to the interior, except those attributed to the presence of some parasite; and even in these cases there must have been a previous preparation of the tissues in order that the parasite find suitable soil for the propagation of its kind. And finally it is self-evident that something must be done besides killing the parasite and its larvæ before a cure can be pronounced. It would seem to follow as a logical sequence that any thing done to remove any valuable symptom before Nature had shown her inability to cope with the matter was defeating the very purpose for which the local application was being made, namely, trying to hasten the cure.

You may say that the internal symptoms will still manifest themselves after the local trouble has disappeared, and therefore the internal treatment may be persisted in until a cure has been made. That depends upon the method. The mental faculties may have become so accustomed to an abnormal condition as to give little heed to its pervertion, until said pervertions have been aroused into activity by some exciting cause; and when this exciting cause has been removed a period of quiescence may follow, which will deceive any one but the competent observer. If you have intelligently *followed* the leading of Nature and carefully guarded against every thing that would deceive, you ought to be a safe judge of the progress being made and of the final outcome.

This ought to be sufficient compensation for the tedious waiting so frequent in these cases.

There is another observation brought out in the cases reported which has a general application in the treatment of all forms of disease. *Why do you persist in giving medicine after Nature demonstrates that she has the case well in hand and is capable of doing good, efficient work?*

The practice of giving the minimum amount of medicine necessary to produce a desired result has been relegated to the "high potentist" for some reason or other, when the vantage might be enjoyable by all who select their remedy in strict accord with the law of similars (and no homœopathist has any moral right to do otherwise). When the vital force needs constant touching up with a dose of medicine you may be very certain that something is wrong. It only takes an instant of time and a single dose to inoculate a man with syphilis. A whiff of air may so disturb the vital force as to bring forth scarlet fever and it is a demonstrated fact that only such an amount of medicine as is needed to make a *stronger*, (more intense) *similar* impression on the vital force will be sufficient to restore harmony. It is worth trying and the result will be a revelation of the wonderful potentiality of a little medicine when properly administered.

To test the matter, put the medicine (any potency) into three or four tablespoonfuls of water and give one tablespoonful every one, two or three hours until all is used or until you see some indication of an aggravation or amelioration of the symptoms and then stop the medicine, (continue with *Placebo* if desired) and watch the result. *If properly selected*, it will be sufficient and the case will go on to recovery or indicate by its symptoms when to repeat or select another remedy and at the same time there will not be the complication which arises from drug symptoms mingling with the symptoms of the natural disease. Try it.—*Hahnemannian Advocate*, Nov. 15, 1899.

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